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FISCAL YEAR 2012 NOAA BUDGET REQUEST AND OVERSIGHT

HEARING

BEFORE THE

SUBCOMMITTEE ON OCEANS, ATMOSPHERE, FISHERIES, AND COAST GUARD

OF THE

COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION UNITED STATES SENATE

ONE HUNDRED TWELFTH CONGRESS

FIRST SESSION

APRIL 13, 2011

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FISCAL YEAR 2012 NOAA BUDGET REQUEST AND OVERSIGHT

WEDNESDAY, APRIL 13, 2011

U.S. SENATE,
SUBCOMMITTEE ON OCEANS, ATMOSPHERE, FISHERIES, AND COAST GUARD,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
Washington, DC.

The Subcommittee met, pursuant to notice, at 2:35 p.m. in room SR–253, Russell Senate Office Building, Hon. Mark Begich, Chairman of the Subcommittee, presiding.

OPENING STATEMENT OF HON. MARK BEGICH, U.S. SENATOR FROM ALASKA

Senator BEGICH. We're going to call this meeting to order.

Thank you, Dr. Lubchenco, for being here, and good afternoon. Again, welcome, and thank you for joining us.

The Ranking Member will be here shortly, but we wanted to go ahead and start to keep things as much on schedule as possible.

Before we start, I want to commend NOAA for its work in recent weeks in detecting and monitoring the Pacific tsunami that followed the massive earthquake in Japan.

Thanks to the professionals at the tsunami warning centers in Hawaii and Alaska, they had a good sense of where and when the tsunami would hit. We were able to monitor the progress of the tsunami in Alaska in real time from our office by using NOAA's network of online tide gauges.

While my state was spared, Hawaii, California, and Oregon suffered some damage, but it could have been far worse without the improvements we made to NOAA's warning system in 2004.

NOAA, of course, is responsible for the stewardship of our oceans, coasts and Great Lakes, stewardship which includes managing the nation's important fisheries, resources and protecting our ocean and coastal economic zones.

Part of the reason we are here today is to discuss the funding necessary to keep these programs operating and to hear from you, Dr. Lubchenco, about how you plan to prioritize and implement NOAA's programs during the evermore challenging and politicized budget climate.

Of course, the yearly budget battles are hardly a new fight. Every administration has its own priorities. As you know well, Congress occasionally has different opinions, and I am pleased to see that the President's budget for Fiscal Year 2012 requests $5.49 billion, includes funding for ensuring the continuing and continuity

of the critical weather- and climate-predicting satellites that my state, as well as the rest of the nation, relies upon. I wish we would have been able to support and make sure that Fiscal Year 2011 had that same thing.

And we know we have some gaps. Those gaps will likely affect the military, marine and aviation safety and search-and-rescue efforts.

I want to hear more from NOAA about how it plans to deal with the likely gap in weather satellite coverage impacting Alaska and the rest of the Nation.

I recognize that the budget also proposes a reorganization within NOAA that brings together the existing climate research and monitoring services under a single line office, the Climate Service.

Alaska, as you know, Dr. Lubchenco, is ground zero for climate change. Change is occurring in the Arctic twice as fast as anywhere else on the planet.

I look forward to hearing more about how this reorganization will affect NOAA's ability to support the decisions of city planners, water managers, farmers, businesses and others who need long-range climate forecasts.

I have questioned the agency's recent spending to advance the ocean and marine spatial planning efforts. In part, because they, like all new priorities, come at the expense of core statutory obligations required by NOAA.

While some states welcome the idea of marine spatial planning, I can tell you, as I have said before, and I know, Dr. Lubchenco, when I say ocean zoning, the idea runs into stiff resistance in Alaska, mainly because they fear the Federal bureaucracy supplanting and planning work they've already done in ensuring Alaskans have a strong local voice in the process, including the North Pacific Fisheries Council.

I'm worried, too, that while you move forward with this, in just the last few weeks fishery observers are missing critically important days at sea because of a lack of funding and the budgetary uncertainty of the current fiscal year.

We, as authorizers, must be made aware of both the opportunities and challenges presented for the agency under different funding scenarios.

Funding will remain tight into the future, and as the missions and priorities expected of your agency appear to increase each year, I look forward to collaboration with you to accomplish the core functions of NOAA in Alaska and the rest of the nation, managing marine fisheries for sustainability, growing jobs in the seafood sector, providing accurate and timely delivery of weather-service forecasts and advisories for safety of pilots, mariners and general public, conducting the baseline research needed to protect our oceans and resources, while also addressing the nation's need for energy.

Dr. Lubchenco, I welcome your testimony today and thank you for being here.

What I'd like to do is ask the Ranking Member—I know she came from another meeting and was rushing over here, so I appreciate it. And that's all we do around here it seems, rush from one place to another.

Senator SNOWE. Exactly right. That's right.

Senator BEGICH. But I want to let Ranking Member Snowe have some opportunity to make some comments, and if she wants to catch her breath for a minute, that's fine, too.

Senator SNOWE. Thank you. Thank you, Mr. Chairman. I have yet to figure out how to be in two places at the same time, but that's——

[Laughter.]

Senator BEGICH. When you figure that out, I think every Senator would like that opportunity to know.

Senator SNOWE. That's right. Thank you.

STATEMENT OF HON. OLYMPIA J. SNOWE, U.S. SENATOR FROM MAINE

Senator SNOWE. Thank you, Mr. Chairman, for holding this timely hearing today to review the President's Fiscal Year 2012 budget request for the National Oceanic and Atmospheric Administration.

And I want to welcome you, Dr. Lubchenco, and I appreciate your ability to be here today to answer our questions.

Today marks the 35th anniversary of the enactment of Magnuson-Stevens, which this committee reviewed last month and has been the foundation that has ultimately led to the announcement that overfishing in the United States has ended an historic achievement which should catalyze efforts to streamline regulations and build our fisheries in coastal economies.

One unifying message from all of our witnesses that day was that adequate funding for the survey data to inform stock assessments is absolutely essential for effective management decisions, choices that have serious implications on our coastal economies. And so it's appropriate that we're now conducting oversight of NOAA's budget proposal for 2012.

Yet, as the Senate is finally debating this year's budget, nearly 7 months after the current fiscal year commenced, by any measure, Congress has abjectly failed to provide the resources, make the critical budget-constrained choices and provide certainty for agencies and departments.

Furthermore, while failing to pass a budget, we were unable to compare the administration's budget proposal to the results from this year's enacted budget.

As a result, I'd like to work with the Chairman, along with the Appropriations Committee, to ensure that we enact a timely budget for 2012—I won't hold my breath—and ensure that key investments in basic research will be provided to job creators that rely on this data.

I appreciate your work, Dr. Lubchenco, under this challenging fiscal impasse, to maintain the crucial operations of NOAA. I look forward to continuing our ongoing conversations about how to improve NOAA's efforts to manage our nation's oceans, coasts and Great Lakes, and to provide accurate and timely weather forecasts and climate projections.

The budget that the administration proposes requests a 15.8 percent increase over the Fiscal Year 2010 enacted levels, which is dedicated almost exclusively to satellite procurement. Clearly, in this fiscal situation, we must redouble our efforts to examine and implement methods that will better leverage Federal funding at a

time when the fiscal reality is that we must prioritize discretionary spending at every agency.

At the same time, more than half of our population lives in coastal communities and oceans and coasts are the lifeblood of our economy.

We have had an ongoing dialogue about fisheries management issues, particularly as they relate to the northeast region. It's absolutely imperative that the budget sustains momentum to programs such as the sector-based approach that have delivered results.

For example, while I appreciate key investments in the President's proposals, including an additional $15 million for expanding stock assessments, at the same time, the budget proposes to cut nearly $6 million from cooperative research, a program that has helped improve relationships between NOAA's fishery and fishermen.

According to the administration's own budget justification, poor or antiquated stock assessments, and I quote, "force fishery managers to resort to ad hoc methods for setting annual catch limits in an overly conservative manner, thus limiting fishing opportunity in order to prevent overfishing."

Both the National Research Council and the Ocean Commission report concluded that a strong fishery stock assessment program is the foundation of successful management of commercial and recreational fisheries. The fact is this budget will only increase the number of fishery stocks with adequate stock assessments by 12 percent over the next five fiscal years.

Frankly, we must have a budget that provides the data that underpin critical management decisions that, again, have dramatic consequences on coastal economies.

In Maine, hypothetical stock assessments—as I've mentioned repeatedly here in this committee—for herring directly led to the closure of the Stinson cannery in Prospect Harbor, exacting further job losses in an economically distressed community.

These are jobs throughout our country, and we must develop a budget plan that will ultimately provide stock assessments for all fisheries that are adequate and are representative of the fishery at large.

By contrast, there is more than $2 billion in this request for a drastic overhaul of NOAA's environmental monitoring satellites, more than the amount for fisheries, ocean and coastal programs and fundamental research combined.

I remain concerned that the execution of acquiring and developing the Joint Polar Satellite System has been overly costly for the American taxpayer, and prior to supporting any budget that includes this level of funding, we need assurances that this program will be on time and on budget.

Finally, NOAA's budget must be developed to be commensurate with the economic challenges confronting coastal economies, whether it is the Gulf Coast that continues to recover from the BP oil spill almost 1 year ago or Prospect Harbor, Maine, which now is transitioning from the closing of the last herring cannery to a new lobster processing facility, because coastal economies require a budget with a laser-like focus on economic growth and diversification.

I appreciate the administration's inclusion of $8 million for distressed fishing communities and displaced fishermen. However, I'm concerned, Dr. Lubchenco, that with the spread throughout the 35 coastal states, commonwealths and territories in the United States, these funds will do little to transition our fishery-based communities to diverse economies.

So, once again, I thank you, Mr. Chairman, for convening this critical hearing. And I thank you again, Dr. Lubchenco, for being here before the Committee today.

Senator BEGICH. Thank you, Senator Snowe.

Senator Isakson, if you have something to state before, I'll be happy to—I'll open that up, but then we'll go right into Dr. Lubchenco.

Senator ISAKSON. I will when it's time to question, but I'm looking forward to hearing Dr. Lubchenco's opening statement.

Senator BEGICH. Very good. Thank you.

Dr. Lubchenco, again, thank you very much for being here. And I appreciate that we're finally on the 2012 budget cycle. I'm sure you're excited about that. I'm as optimistic as the Ranking Member on the 2012 budget. So, hopefully, you'll raise that optimism as you present today. So thank you very much again. Please.

STATEMENT OF JANE LUBCHENCO, PH.D., UNDER SECRETARY OF COMMERCE FOR OCEANS AND ATMOSPHERE AND ADMINISTRATOR, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA), U.S. DEPARTMENT OF COMMERCE

Dr. LUBCHENCO. Thank you very much, Chairman Begich, Ranking Member Snowe, Senator Isakson. It's a pleasure to see each of you. Thank you for your leadership and your support of NOAA.

As you know, we are one of the nation's premier environmental science and stewardship agencies. The vital role that we play in the protection of life and property has, indeed—as you mentioned—been exemplified by NOAA's actions in the wake of the tragic events in Japan last month.

The earthquake and resulting tsunami had far-reaching effects, and many of NOAA's programs played a critical role in issuing life-saving information to emergency officials and the public in the U.S. and around the world.

I'm honored to be here today to discuss the President's Fiscal Year 2012 budget. It recognizes the central role that science and technology play in creating jobs and improving the health and security of Americans.

I want to highlight several lynchpins of our Fiscal Year 2012 request—key savings, climate services, weather, satellites, fisheries and protected resource management and coastal and ocean services.

As part of the administration's administrative efficiency initiative, NOAA analyzed its administrative costs and reduced non-essential spending by $67.7 million. We conducted a rigorous review of our programs and activities and identified additional savings.

The Fiscal Year 2012 request, as you noted, is $5.5 billion, a decrease from the Fiscal Year 2011 request and an increase above the Fiscal Year 2010 enacted due primarily to our requirements to execute the restructured civil polar satellite program.

The Fiscal Year 2012 budget request includes a proposed budget-neutral reorganization that brings together NOAA's existing but widely disbursed climate capabilities under a single line office called the Climate Service. The Climate Service, if approved by Congress, would have a budget of $346.2 million.

The climate services that we currently provide demonstrate their utility. Advances in science make it possible for us to provide useful information about the months-to-years timeframe, which is of immense utility to businesses, communities and military operations.

The National Weather Service provides critical information to communities and emergency managers and is the nation's first line of defense against severe storms and disasters like tsunamis and flooding.

The Fiscal Year 2012 request for this service is $988 million. This request envisions using cutting-edge technologies to achieve our vision of delivering more reliable forecasts, reducing weather-related fatalities and improving the economic value of weather, water and climate information.

This includes a $26.9 million increase to modernize our aviation weather forecasts and warnings to support the NextGen development activities allowing for better integration of weather information into decisionmaking solutions for the FAA, potentially reducing the number of air delays and saving billions of dollars.

NOAA's satellites provide the data and information for forecasts that are vital to every citizen. They enable safe transportation, smart construction and emergency rescue missions.

The Fiscal Year 12 budget request for the satellite service is $2 billion, which we'll invest in multiple satellite acquisition programs for the continuity of critical weather, climate and oceanographic data. This includes an increase of $687.8 million for the essential Joint Polar Satellite System.

As Senator Snowe noted, as we look toward Earth Day next week, I want to acknowledge and highlight the 35th anniversary of the Magnuson-Stevens Fishery Conservation and Management Act. This law will and continues to be the driver for NOAA as we deliver on our commitment to environmental stewardship, sustainable fisheries and healthy marine ecosystems.

Because of MSA, we are on track to end overfishing in federally managed fisheries, also to rebuild stocks and ensure sustainable use of our ocean resources, all of which are essential to preserving the livelihoods of fishermen and related industries.

In Fiscal Year 2012, NOAA requests $1 billion to support fisheries and protected resources management. This request includes investments to expand annual stock assessments and improve the quality of catch monitoring and recreational fisheries.

We will also continue to support the consideration of catch share management by the councils. Catch shares have yielded significant financial and ecological benefits as well as improved safety for fishermen where they have been utilized.

It is expected that the nation's coastal population will grow by more than 11 million by 2015. The president's Fiscal Year 2012 budget includes $559 million to enable NOAA to continue deliv-

ering a dynamic range of services promoting safe, healthy and productive oceans, coasts and Great Lakes.

This request includes $2.9 million to develop an oil spill research and development program within NOAA's Office of Response and Restoration, and a $5 million increase to implement the U.S. Integrated Ocean Observing System's Surface Current Mapping Program.

In closing, I would like to note that I have a nickel in my hand. I believe that this nickel represents one of the best bargains in the world. It costs each American slightly less than five cents a day to operate NOAA. And for this nickel you get the best weather forecasts in the world that allows us to save lives and property when severe storms strike.

This nickel helps make our coasts more healthy and vibrant. It supports American business owners, from fishermen on the coast to farmers in the heartland, and this nickel helps keep our homeland secure.

At NOAA, our work is everyone's business. We take our work seriously because we know that citizens and businesses depend on us each and every day.

I look forward to working with the members of this committee and our constituents to achieve the goals that we've laid out in the implementation of the 2012 budget.

I'm happy to answer any questions that you may have. Thank you very much.

[The prepared statement of Dr. Lubchenco follows:]

PREPARED STATEMENT OF JANE LUBCHENCO, PH.D., UNDER SECRETARY OF COMMERCE FOR OCEANS AND ATMOSPHERE AND ADMINISTRATOR, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA), U.S. DEPARTMENT OF COMMERCE

Chairman Begich and members of the Committee, before I begin my testimony I would like to thank you for your leadership and the support you have shown the Department of Commerce's National Oceanic and Atmospheric Administration (NOAA), one of the nation's premier environmental science and stewardship agencies. Your continued support for our programs is appreciated as we work to improve the products and services that are vital to supporting America's businesses, communities, and people. I am honored to be here as the Under Secretary of Commerce for Oceans and Atmosphere at NOAA to discuss the President's FY 2012 budget.

Secretary Locke is singularly focused on how the Department of Commerce can help American businesses compete for the jobs of the future. As part of the Commerce Department, NOAA generates value for the Nation by providing the information and services that communities, managers, businesses, and individuals rely on every day to make decisions about their lives and businesses. NOAA touches the lives of every single American; we work 24/7 to keep families safe, property protected, living marine resources vibrant, communities thriving, and businesses strong. NOAA works everywhere, in every state, and from the surface of the sun to the depths of the ocean. Our research informs our many services and science guides our stewardship of the oceans, coasts, and Great Lakes.

The vital role NOAA plays in the protection of life and property has recently been exemplified by NOAA's action in the wake of the earthquake and resulting tsunami in Japan last month. NOAA played a critical role in issuing life saving information to emergency officials and the public in the U.S. and around the world. I'm sure I echo the sentiments of many when I say that our hearts, thoughts and best wishes are with the people of Japan and the survivors of the cataclysmic earthquake and tsunami that, in a matter of minutes, took the lives of thousands and forever changed the lives of millions. NOAA will continue to provide whatever support we can as those affected recover and rebuild from this tragedy.

The President's FY 2012 budget request promotes innovation and American competitiveness and lays the foundation for long-term economic growth, while making

responsible reductions. In particular, the budget recognizes the central role that science and technology play in stimulating the economy, creating new jobs, and improving the health and security of Americans.

FY 2012 Budget Request and FY 2010 Highlights

Secretary Locke has brought a dedicated focus on efficiency and good management to the Department of Commerce. As part of the Administration's Administrative Efficiency Initiative, an aggressive government-wide effort to curb non-essential administrative spending, NOAA analyzed its administrative costs and reduced non-essential spending by $67.7 million. Beyond administrative savings, NOAA engaged in a rigorous review of its programs and activities and identified additional savings that were achievable. For example, we were able to reduce the cost of operating our current satellite programs, and we restructured our international portfolio of climate research. Further, as a member of the newly established Gulf Coast Ecosystem Restoration Task Force we are working with Federal and state agencies to find efficiencies, improve coordination and accountability in restoring Gulf Coast ecosystems.

In short, the FY 2012 budget for NOAA reflects our efforts to focus on program needs, identify efficiencies, and ensure accountability. It sustains core functions and services, and proposes increases for only the most critical programs, projects, or activities necessary to address the growing demand for NOAA's science, services, and stewardship. The FY 2012 request is $5.5 billion, which is a decrease from the FY 2011 request. The FY 2012 request is an increase above FY 2010 enacted due primarily to our requirements to execute the restructured civil polar satellite program. As I will discuss later, this new generation of satellites is needed to replace satellites that will go out of service in the years to come. They are essential for both routine weather forecasts on which the private weather industry depends, and for storm warnings and watches that only the government can issue. The expenditures on satellites are mission critical for NOAA. People's lives and property depend on them. This year 21 people have been rescued because of NOAA satellite tracking, and 91 have been rescued since last October. Beyond weather forecasts, fishermen and recreational boaters count on NOAA satellites to keep them safe in the event of an emergency at sea.

The FY 2012 NOAA budget recognizes that environmental and economic sustainability go hand in hand. We learned through the BP *Deepwater Horizon* oil spill and other events that we cannot have healthy economies without healthy communities and healthy ecosystems and that good science and stewardship is good business. NOAA's 2012 budget makes the investments needed to save lives and livelihoods, to understand these critical connections, and to ensure sustainable communities, economies, and ecosystems.

Now I will turn to the details of the FY 2012 budget request and outline areas of significant investment.

Climate Service

The FY 2012 budget request includes a proposed budget-neutral reorganization that brings together NOAA's existing widely dispersed climate capabilities under a single line office management structure called the Climate Service. The proposed organization mirrors the structure recommended by the National Academy of Public Administration expert panel that, at Congress' request, completed a study on options for a climate service in NOAA. The principal goal of this budget-neutral reorganization is to better align NOAA's existing assets under a unified leadership to more efficiently and effectively respond to the rapidly increasing public demand for climate services. The Climate Service would provide reliable and authoritative climate data, information, and decision-support services, and to more effectively coordinate with other agencies, partners, and the private sector. And—important to this committee and to me—the proposed structure would strengthen the world-class science for which NOAA is justly known. Without continued advances in the science that supports our mission, the utility of services will degrade with time. Hence, the success of this organization requires attention to strengthening our core science capacity, strengthening the service-provision capacity and strengthening the connections between the two.

NOAA is continually improving our scientific and technological capacity to develop and deliver a range of science and services. For example, NOAA's improved maximum precipitation predictions have been used to develop new standards for dam design that are being implemented around the Nation to improve dam safety and reliability. Similarly, through collaboration with the National Association of Home Builders and the Department of Housing and Urban Development, NOAA developed

an Air Freezing Index that the home building industry estimates saves $300 million annually in construction costs and the equivalent of 9 million gallons of gasoline.

The budget-neutral realignment of resources within the current NOAA budget would not change staffing levels, would not require employee relocations, physical relocation of programs or labs, any new facilities, and would not increase the size of NOAA's overhead. The Climate Service headquarters would be located in Silver Spring, Maryland.

The NOAA Climate Service, if approved by Congress, would have a budget of $346.2 million. Of this amount, NOAA proposes $3.0 million to support the Regional Climate Centers (RCC) in FY 2012. This funding will maintain support for RCCs as critical NOAA partners in the development and delivery of regional climate services. The RCCs will be aligned with the six NOAA Climate Service Regions and fully integrated as core components of NOAA's regional climate services partnership. Each center will function as a source of expertise in the region, working to identify stakeholder needs and matching these needs with the emerging science and decision support services flowing from the Climate Service's core capabilities. For example, this work could improve products for farmers, who already rely on NOAA climate data, particularly in El Niño/Southern Oscillation years, to make smart decisions about what variety of seed to plant and the amount of fertilizer to use. These types of forecasts can potentially provide a $500–$960 million per year benefit to the U.S. agriculture industry.

National Weather Service (NWS)

NOAA's National Weather Service (NWS) is the Nation's first line of defense against severe weather. NOAA provides weather, hydrologic, and climate forecasts and warnings for the United States, its territories, and adjacent waters for the protection of life and property and the enhancement of the national economy. More sectors of the U.S. economy are recognizing the impacts of weather, water, and climate on their operations and are becoming more sophisticated at using weather-related information to make better decisions. The NWS provides critical information to communities and emergency managers. In 2010, the United States experienced a number of extreme weather events including the historic winter blizzards in the Northeast early in the year, historic flooding in the Midwest and Tennessee, and the third most active Atlantic hurricane season on record. The tragedy of the March 2011 tsunami in Japan, which had far reaching effects including the U.S. West Coast, reinforces the very real threat of severe weather events, and underscores the value of comprehensive warning systems and a prepared public.

The FY 2012 request for NWS is $988 million. The request envisions using cost-cutting and cutting-edge technologies to better support the programs necessary to achieve NOAA's vision of delivering more reliable forecasts, reducing weather-related fatalities, and improving the economic value of weather, water, and climate information.

Weather-related air traffic delays cost the U.S. economy over $41 billion in 2007, according to the Congressional Joint Economic Committee. Two thirds of these delays could be avoided with more accurate and better-integrated weather information for decision-making. To meet the rising demands of the air transportation industry, NOAA is involved in a collaborative partnership with the Federal Aviation Administration (FAA) and other Federal agencies to create the Next Generation Air Transportation System (NextGen). NOAA requests a $26.9 million increase to modernize our aviation weather forecasts and warnings. This funding supports NextGen development activities, allowing for better integration of weather information into decision-making solutions for the FAA—potentially reducing the number of air delays.

Wind shear is hazardous to aviation and critical to hurricane formation and intensity. The nation's upper air (UA) network enables unmatched ability to detect this wind shear and enables much improved ability to define the jet stream core by providing approximately 78,000 atmospheric profiles (wind, humidity, temperature, pressure and altitude) per year from ground level to up to 60,000 feet. To improve the UA network, NOAA requests a $5 million increase for new GPS radiosondes to provide a 50 percent improvement in wind measurement accuracy and a 6-fold improvement in vertical resolution. With this investment, NOAA will fully fund the purchase of GPS radiosondes for all 102 UA observing stations, ensuring improvements to weather models.

Large maritime data voids exist where no meteorological or oceanographic data are routinely sampled due to poorly maintained buoys. This lack of data makes it difficult for forecasters to make accurate and timely marine warnings and forecasts and to measure the accuracy of their forecasts. NOAA currently operates 101 moored, weather observation buoys and 49 coastal, marine automated network sta-

tions. However, over the last 8 years, system performance has trended downward to the current low of 67 percent data availability as of February 2011. This trend will continue downward to 65 percent data availability by 2011 without increased support. NOAA requests a $4 million increase to provide operations and maintenance funding for damaged and destroyed buoys and to comply with new international regulations. Funds will also be used to begin reducing the backlog of deferred maintenance by employing charter vessels to supplement the diminishing availability of U.S. Coast Guard ship time for servicing the weather buoy network.

In FY 2012 NOAA requests a total of $41 million, including $10.2 million from mandatory funds provided by the Deficit Reduction Act of 2005, to support our tsunami warnings and research activities. Within minutes after the March 11th earthquake struck, NOAA issued its first tsunami warning for Japan, Russia, Marcus Islands, and Northern Mariana Islands as part of the coordinated global response to this tragic natural disaster. Shortly thereafter, timely watches, advisories, and warnings were extended to vulnerable coastal areas of Alaska, British Columbia, California, Washington, Oregon, and Hawaii well ahead of the arrival of the first waves. To maintain the effectiveness of these services, NOAA's Tsunami Program will use the FY 2012 funding to continue operations of NOAA's Deep-ocean Assessment and Reporting of Tsunami (DART®) buoy network, maintenance of its 164 sea-level stations, and funding of its two Tsunami Warning Centers (TWC). NOAA will continue to expand community preparedness and finalize the balance of the tsunami hazard mitigation models (to cover all U.S. coastal areas). NOAA will also continue research to improve its tsunami warning and forecast capabilities, and the completion of high resolution models for tsunami inundation forecasts for tsunami threatened local communities.

Although NOAA's Tsunami Warning Centers and DART stations are operated by NWS, NOAA drew from the capabilities of all our line offices to provide a comprehensive response to the March 2011 tsunami. The following are examples of the contributions from other parts of NOAA:

- NOAA's DART stations, a result of research performed at NOAA's Office of Oceanic and Atmospheric Research, detected and tracked the tsunami as it traveled from Japan across the Pacific Basin.
- National Ocean Service tide gauges, which help detect the presence of a tsunami wave, use GOES satellites operated by NOAA's Satellite Service to relay data to the tsunami warning centers.
- NOAA response teams from the National Ocean Service are in California to assist with detection of submerged debris resulting from the tsunami in marine transportation arteries along the coast.

Finally, the underpinning of NOAA's products and services mentioned previously is the model-based guidance of NOAA's operational high performance computing (HPC). HPC provides models and model-based estimates of both current and future states of the Earth's environment, which are a key component of modern weather forecasts. NOAA requests an $11 million increase toward transitioning NOAA's HPC to a new contract, as well as continuing regular improvements to our numerical weather prediction modeling.

National Environmental Satellite Service (NESS)

NOAA's satellites provide the data and information for forecasts that are vital to every citizen in our Nation. From safe air, land, and marine transportation to construction and emergency rescue missions, we all use satellite products in our everyday lives. In FY 2010, our satellite program saw a major milestone accomplished with the launch of Geostationary Orbiting Environmental Satellite (GOES)—15, the final spacecraft in the latest series. GOES–15 joined three other GOES spacecraft in assisting the Agency's forecasters to more accurately track life-threatening weather from tornadoes, floods, and hurricanes to solar activity that can impact satellite-based electronics, communications, and power industries. In FY 2010, NOAA satellites also provided key support in the rescue of 281 people throughout and near the United States by providing their location to emergency responders.

The proposed reorganization would also affect some programs within the National Environmental Satellite, Data, and Information Service (NESDIS), which would be renamed the National Environmental Satellite Service (NESS), as all three of its Data Centers would be transferred to the Climate Service. The FY 2012 budget request for NESS is $2 billion, which we will invest in multiple satellite acquisition programs for the continuity of critical weather, climate, and oceanographic data. NOAA requests an increase of $687.8M for the Joint Polar Satellite System (JPSS), which is NOAA's responsibility under the former National Polar-orbiting Operational Environmental Satellite System (NPOESS) program. Polar satellites provide

critical weather forecasting for the $700 billion maritime commerce sector and provide a value of hundreds of millions of dollars to the fishing industry. The satellites save approximately $200 million each year for the aviation industry in ash forecasting alone and provide drought forecasts worth $6–8 billion to farming, transportation, tourism and energy sectors. Both civilian and military users will use JPSS data and products, which will continue to fulfill NOAA's requirements to provide global environmental data used in numerical weather prediction models for forecasts. On behalf of NOAA, the National Aeronautics and Space Administration (NASA) will serve as the lead acquisition agent for JPSS, which supports the afternoon mission requirements. The Department of Defense will continue the acquisition of early morning orbit assets. NOAA is committed to working with our partners to complete the transition from the NPOESS program and to assure the continuity of Earth observations from space.

The GOES–R series satellites will provide critical weather observations for severe weather events, such as hurricanes, and also provide key enhancements in observational capabilities for climate, oceans and coasts, and the space environment. This program is the next-generation of geostationary satellites and provides mission continuity through 2036. NOAA continues to support the GOES–R program with a rephasing, taking us from a two-satellite program to a four-satellite program with the addition of two optional satellites (GOES–T&U), while still providing continued satellite engineering development and production activities for GOES–R and GOES–S.

An uninterrupted climate record is critical to understanding global sea level rise, which directly threatens coastal communities and ecosystems through increased exposure and erosion, more intense storm-surge and tidal flooding, and loss of natural habitat due to drowned wetlands. Therefore, NOAA is requesting an additional $33.0 million to continue development of the Jason–3 satellite, which will provide continuity of sea surface height measurements, ensuring an uninterrupted climate record of over 20 years. The Jason–3 mission is a joint U.S.—European funded partnership. NOAA requests an $11.3 million increase to partner with the Taiwan National Space Organization for the launch of 12 satellites to replenish and upgrade the Constellation Observing System for Meteorology, Ionosphere, and Climate (COSMIC) satellite constellation. This program is a cost effective means of obtaining information about temperature and moisture in the atmosphere around the globe, which will improve forecasting accuracy.

In addition, a requested increase of $47.3 million will support, in cooperation with NASA, refurbishing the existing NASA Deep Space Climate Observatory (DSCOVR) satellite and its solar wind sensors and developing a Coronal Mass Ejection Imager. The data and information provided by DSCOVR will support the operations of the Space Weather Prediction Center, which generates accurate and timely 1 to 4 day space weather forecasts and warnings. Space observations of geomagnetic storms are vital to reduce negative effects to power grids, GPS, telecommunications, the health and safety of astronauts, and the viability of satellite systems.

Oceanic and Atmospheric Research (OAR)

The major change as a result of the proposed reorganization to create a Climate Service (described above) is that NOAA would also strategically realign its existing core research line office, the Office of Oceanic and Atmospheric Research (OAR), to strengthen the agency's overall science enterprise and advance the atmospheric and ocean, coastal, and Great Lakes research and applied science goals expressed in the *America COMPETES Reauthorization Act of 2010.* OAR will refocus its work to serve as an innovator and incubator of new science, technologies, and applications, and an integrator of science and technology across all of NOAA.

NOAA is committed to strengthening and integrating NOAA's science enterprise consistent with the President's call for science and innovation. NOAA's request includes $212 million for OAR to continue strengthening core capabilities, such as improving our understanding of ocean acidification and its impacts, and promoting conservation and use of America's coastal resources through our renowned Sea Grant Program, one of our many direct links to universities, citizens, and communities around the Nation. NOAA will also invest in the future by supporting innovation in weather forecasting science that can inform clean, renewable energy generation, which is related to an MOU with the Department of Energy. In FY 2012, NOAA requests $2 million to support research in targeted wind resource regions across the Nation. Funding will advance weather forecast accuracy and quality to allow for more efficient implementation of wind power usage in the United States.

Another core capability at NOAA is exploration. The NOAA Ship *Okeanos Explorer* is among the most technologically advanced research vessels and platforms for ocean exploration in the United States. In FY 2012, NOAA is requesting an additional $1.5 million to advance the operations of the *Okeanos Explorer* with the oper-

ation of telepresence technology, which enables scientists, educators, and others to participate and lead ocean exploration missions from remote shore-based Exploration Command Centers; to operate and upgrade the ship's autonomous and remotely-operated vehicles; provide additional scientific days at sea; and reduce our huge knowledge gap of what lies in the deep ocean.

National Marine Fisheries Service (NMFS)

NMFS conserves, protects, and manages living marine resources to sustain marine ecosystems, afford economic opportunities, and enhance the public's quality of life. Rebuilding our nation's fisheries is essential to preserving the livelihoods of fishermen and related industries. In 2008, U.S. commercial and saltwater recreational fisheries supported 1.9 million full- and part-time jobs and generated $163 billion in sales impacts.[1] In FY 2012, NOAA requests $1.001 billion to support fisheries and protected resource management to ensure an optimal balance between conservation objectives and economic opportunities.

NOAA is making important strides to end overfishing, improve fishery management, and put fisheries on a path to sustainability. Working with the Regional Fishery Management Councils, in FY 2010, five fisheries stocks were rebuilt. Based on estimates, rebuilding U.S. fisheries would increase the current dockside value by an estimated $2.2 billion (54 percent) annually from $4.1 billion to $6.3 billion annually. In FY 2012, NOAA will continue to maximize the potential of the nation's most economically important fish stocks through sound science and management. NOAA will invest $67 million to expand annual stock assessments to continue to ensure Annual Catch Limits (ACL) are based on the best available science. ACLs and accountability measures (AM) are required under the 2007 reauthorization of the *Magnuson-Stevens Fishery Conservation and Management Act* for all non-exempt fish stocks, including overfished stocks, by the end of 2011 to end overfishing. This investment will help verify that NOAA successfully ended overfishing ensuring ACLs are set at the most optimal level possible so that the return for fishermen is maximized while maintaining the health of the resource.

NOAA will invest $3 million to improve the timeliness and quality of catch monitoring in recreational fisheries to ensure recreational fisheries are not unnecessarily restricted due to a lack of data. This is part of a broader effort to work more closely with the recreational fishing community.

In addition to sound science, robust management strategies are vital to sustainable fisheries. In 2010, NOAA released the National Catch Share Policy, and we will continue to support consideration of catch share management by the Councils. Catch share programs, which include limited access privilege programs and individual fishing quotas, dedicate a secure share of fish to individual fishermen, cooperatives, or fishing communities. In the United States, catch shares are currently successfully implemented in 15 fisheries from Alaska to Florida, and local Fisheries Management Councils are in the process of developing them in several additional fisheries. Catch share programs are difficult and sometimes controversial to implement, and we recognize that some in Congress are concerned about them. But they have yielded significant financial and ecological benefits to the fisheries that utilize this system. Both here and in other countries, catch shares help to eliminate overfishing and achieve annual catch limits, improve fishermen's safety and profits, and reduce the negative biological and economic effects of the traditional "race for fish." This budget includes $54 million to support the voluntary establishment of catch share programs by those Councils that want to utilize this tool to achieve the *Magnuson-Stevens Act* requirements. We want to support those Councils that believe that catch shares are the way to better manage their fisheries but need assistance in designing and implementing them.

In addition to fisheries, NOAA manages protected resources, such as marine mammals and turtles. This requires balancing conservation objectives and economic opportunities, including commercial fishing activities and energy development. Investments in priority research in recovery actions are required to mitigate harm and maximize economic potential. In FY 2012, NOAA will invest an additional $2.5 million to increase NOAA's capacity for protected species stock assessments that provide the foundation of information for decisionmakers. We will continue supporting the Species Recovery Grants Program with a requested $8.0 million increase to provide grants to states and tribes to conduct priority recovery actions for threatened and endangered species, including restoring habitat, monitoring population trends, developing conservation plans, and educating the public.

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[1] Fisheries Economics of the United States, 2008: *http://www.st.nmfs.noaa.gov/st5/publication/fisheries_economics_2008.html*.

Managing fisheries and protected species to their full biological and economic potential requires additional efforts focused on maintaining habitat and ecosystem functioning. NOAA requests $24 million for the Community Based Restoration Program, including a new $5 million effort to address larger restoration projects. NOAA plans to increase fish passage, spawning, and rearing habitat by implementing large-scale ecological restoration in targeted areas such as wetlands. To support the restoration and protection of the Chesapeake Bay, we request a $5 million increase for regional studies in the Bay. NOAA supports the President's Executive Order to restore the Chesapeake Bay by providing enhanced understanding of the relationships between the Bay's living resources and habitat, coordinating protection and restoration of key species and habitats across jurisdictional lines, and supporting a coordinated system of monitoring platforms distributed across the Bay.

National Ocean Service (NOS)

In July 2010, President Obama signed Executive Order Number 13547 that adopted the Final Recommendations of the Interagency Ocean Policy Task Force and established the National Policy for the Stewardship of the Oceans, Coasts, and the Great Lakes—reinforcing the notion that "healthy oceans matter." NOS supports this policy by translating science, tools, and services into action to address coastal threats such as climate change, population growth, port congestion, and contaminants in the environment. A pivotal event in 2010 was the explosion of the BP *Deepwater Horizon* oil rig on April 20. Within hours, NOAA responded, providing targeted weather forecasts and oil spill trajectory maps and mobilizing personnel and assets to respond to what evolved into the largest oil spill in U.S. history. The Office of Response and Restoration (OR&R) played a critical role in our response and is leading our efforts to assess damage caused by the event. Over half of the U.S. Gross Domestic Product is generated in coastal counties,[2] and it is expected that the nation's coastal population will grow by more than 11 million by 2015 so NOS' services will become more vital to the coastal environment and economy.[3] Increasing population density, growing economies, and increased vulnerability to damages from hazards such as sea level rise or storms, habitat loss, and other threats makes the task of managing coastal resources more difficult. The President's FY 2012 Budget includes $559.6 million to enable NOAA to continue delivering a dynamic range of nationwide coastal and Great Lakes scientific, technical, and resource management services to meet the vision of being a Nation with safe, healthy, resilient, and productive oceans and coasts.

Human uses of ocean resources (*e.g.,* ocean-based energy, marine aquaculture, commercial and recreational fishery products, shipping and navigation services, and other activities) need to be managed holistically. In FY 2012, NOAA requests $6.8 million to develop an agency-wide capability to conduct and support Coastal and Marine Spatial Planning (CMSP) in U.S. waters. CMSP will help us manage ocean resources in a systematic way by evaluating competing ocean uses, assessing opportunities and potential cumulative impacts, and working with industry, state and local decisionmakers and other stakeholders, to explicitly make trade-off decisions. CMSP is designed to focus on up front planning. There are no regulations involved. It does not add another layer of government but is designed to be more efficient, effective, and reduce redundancies in decisionmaking. With the new Ocean Policy we are already witnessing efficiencies in our mapping and data collection across the Federal Government, with data and information from the Departments of Defense and the Interior, and from Coast Guard, being integrated into a common data base, which will be available to the public in the future.

The Final Recommendations of the Interagency Ocean Policy Task Force include a framework for implementing CMSP across the United States in a manner that respects regional variation of issues and priorities. This initiative will significantly advance the Nation's capability to effectively and transparently match competing human uses to appropriate ocean areas. To further support CMSP and regional ocean governance, NOAA requests $20 million to establish a competitive grants program that will support regional ocean partnerships, such as the Gulf of Mexico Alliance, South Atlantic Governor's Alliance, and the West Coast Governor's Agreement on Ocean Health that are vital for advancing effective ocean management. In addition, a proposed increase of $1 million in our mapping program will significantly improve the accessibility of integrated ocean and coastal mapping data.

The BP *Deepwater Horizon* oil spill is a stark reminder that spills of national significance can occur despite the many safeguards and improvements that have been

[2] Kildow, J.T., C. S. Colgan, and J. Scorse. 2009. *State of the U.S. Ocean and Coastal Economies 2009.* National Ocean Economic Program.

[3] Population Trends Along the Coastal United States: 1980–2008, NOAA 2004.

put into place since the *Oil Pollution Act of 1990* was enacted. The risk of oil spills remains a concern given increases in marine transportation, pressures to develop domestic areas for drilling offshore, aging infrastructure susceptible to sea level rise and violent storms in U.S. coastal areas, and opening the Arctic to both shipping and oil development. NOAA's OR&R is the lead trustee for the public's coastal natural resources and an international scientific leader for oil spill response, assessment, and restoration. NOAA requests $2.9 million to develop an oil spill research and development program within OR&R to advance response technologies and capabilities, especially in deep water and Arctic environments. With this funding, NOAA will support external grants for essential research to provide useful information, methods, and tools for planners, oil spill responders, and assessment practitioners. Also in support of oil spill response, NOAA requests a $5.0 million increase to implement the U.S. Integrated Ocean Observing System (IOOS®) Surface Current Mapping Plan using high frequency (HF) radar surface current measurements. HF radar provides information vital to oil spill response, national defense, homeland security, search and rescue operations, safe marine transportation, water quality and pollutant tracking, and harmful algal bloom forecasting.

The BP *Deepwater Horizon* oil spill made it apparent that the economic and social well being of our coastal communities depends on the environmental suitability of our coastal resources. Numerous coastal communities, not only in the Gulf but all along our coasts, are being impacted by the loss of fishing opportunities. In FY 2012, NOAA requests $8 million to create a National Working Waterfronts grant program to assist fishing-dependent coastal communities. These grants will assist distressed or at-risk fishing communities by providing resources for planning, capacity building, and other activities to support economic diversity, resource conservation, and economic capital growth.

Program Support

To deliver sound science and services, NOAA must continue to invest in its information technology (IT) infrastructure, the maintenance and construction of NOAA facilities, and the specialized aircraft and ships that complete NOAA's environmental and scientific missions. A requested $9.1 million increase will reduce the risk of cyber attacks by enhancing security monitoring and response capabilities and consolidate our IT infrastructure into a single enterprise network. This budget includes an additional $10 million to support major restoration and modernization projects to address critical facility condition deficiencies and to improve safety and operating conditions in support of NOAA's mission. The FY 2012 request ensures that NOAA's fleet of vessels is able to provide reliable, compliant, and high-quality ship support to NOAA programs through several increases. For example, $3.4 million is requested to support environmental compliance costs, including ensuring that NOAA ships are not contributing to water quality degradation. Efforts to extend and maintain the life of the NOAA ships will be supported through an $11.6 million increase for repair periods.

Also critical to the execution of NOAA's mission is our investment in the future. Students in K–12 we support today become our workforce of the future; undergraduate and graduate fellowship recipients provide immediate dividends; and each and every citizen touched by our literacy and outreach efforts become stewards of our natural resources. These down payments help to fulfill the President's commitment to education. The FY 2012 budget includes $20.8 million for NOAA's Office of Education to implement and manage scholarship programs aimed at fostering competitiveness in science, technology, engineering and math by providing quality educational opportunities.

Conclusion

Overall, NOAA's FY 2012 budget request reflects the commitment that Secretary of Commerce Gary Locke and I have made to the President to out-educate, outbuild, and out-innovate our competitors in support of robust economic job growth. We have made tough choices to cut lower priorities and identify cost-savings measures. The resources that are requested in this budget are critical to the future success of meeting our needs in climate, fisheries, coasts, and oceans. I look forward to working with you, the Members of this committee, and our constituents to achieve the goals I have laid out here through the implementation of the FY 2012 budget. Thank you for the opportunity to present NOAA's FY 2012 budget request. I am happy to respond to any questions the committee might have.

Senator BEGICH. Thank you very much. And let me—I'm going to hold my questions. I'll go to the Ranking Member, then Senator Isakson after that. Senator Snowe.

And we'll limit this to—we'll probably have a couple of rounds, but we'll do this first round 5 minutes and then we'll go from that.

Senator SNOWE. Thank you, Mr. Chairman.

Administrator Lubchenco, I wanted to get to the sector-based management issues in the northeast, and based on the latest figures from NMFS, only 16 percent of the allowable catch of the haddock from the Georges Bank has been caught and only 31 percent of pollock.

The more than 54,000 metric tons of haddock and pollock that can be caught this year are restricted by the choke species, the other species that obviously are strictly limited, and also by poor science and regulations that are preventing the optimum yield from our fisheries.

I was wondering, given the fact that in your budget you include an increase of $36 million for catch shares—and that's a $36 million increase over the $18 million that was provided in this current fiscal year—how is that going to be allocated, spread across the nation, because, obviously, that is critical.

I don't want this funding to be consumed by bureaucracies, but rather to expand the maximum yield and the ability of fishermen to be able to catch the maximum available fish that currently isn't the case, and we want to be sure that it too preserves the fishing community.

And so that comes down to cooperative research. It comes down to technology and practices that will allow the fishermen to target healthier species.

So can you give us an indication of how you're going to use that $36 million, in addition to the $18 million that was provided this year?

Dr. LUBCHENCO. Senator, thank you for highlighting the importance of this request.

NOAA Fisheries works closely with the councils to identify which fisheries are appropriate for catch share management programs and then to help design and then subsequently implement, if it is approved, a catch share program.

Each of the councils has drawn up a list of which of the fisheries they think are ripe for development of new opportunities, and the request enables the development of new catch share programs as well as the continued implementation of existing ones.

As you very correctly pointed out in your opening remarks, it is vitally important that we have the best possible stock assessment data, so that we can set catch limits that are appropriate regardless of the type of fishery management program that is used. And so the request that we have for an increase in $15 million in stock assessments is intended to address the high priority stocks and give us additional information so that we can both set good catch limits on a variety of species, but also know how well we're doing in ending overfishing for many of those stocks.

Senator SNOWE. So would the councils be making the decisions in terms of what activities?

Dr. LUBCHENCO. Senator, we have worked with the councils too. They have each identified which fisheries they believe are appropriate for a catch share program. And they have identified their own priorities, and that's what we have put into this request. It's

based on their setting of priorities for the next programs that they believe are teed up.

It's, I think, important to recognize that many of these catch share programs take years to develop. The one that just went into effect on the West Coast, the trawl ITQ groundfish fishery, took seven to eight years to actually develop, and each one is different from another.

So careful planning, learning from past experience, figuring out how we're going to fund the increased monitoring that is required as observers on the boats, how to transition that to the industry picking up the tab for that, that's all part of the design elements that are needed.

Senator SNOWE. I hope, though, that the focus could also be placed on the maximum yield and maximum harvesting on the part of the fishermen. I mean, the point is they have to have enough of a harvest to sustain themselves, and that's one of the key concerns.

Given the difference between what fishermen catch and what's available for catching, but because of all these other limitations for the other species that are strictly limited, what is it that we can do to help them expand that capacity and that capability?

For instance, I know that currently 10 percent of the catch that is not caught can be carried forward, and there have been requests, for example, to expand or increase that 10 percent to a higher level.

So, one, I'd like you to answer the question whether or not you would support such an increase; and, two, what are we doing to focus on the maximum harvest that's available?

Dr. LUBCHENCO. Senator, the $15 million request for an increase in stock assessments will help that very significantly, and that's why that is one of our priorities this year. We need those good data.

Focusing on New England, for a moment, there are periodic new data that are taken on many different species and that allows us to make adjustments to the annual catch limits that are set on an annual basis.

And for a number of the species, because our fishery management practice or our management has been working, we have recently been able to increase those catch limits based on new scientific information. So we need the new science to raise the catch limits. This request will help us get the new knowledge that enables us to do that down the road.

Senator SNOWE. And would you support an increase in the 10 percent?

Dr. LUBCHENCO. I would support an increase for any catch limit if we have the science to underpin that that would not jeopardize—is consistent with Magnuson-Stevens.

Senator SNOWE. Thank you.

Senator BEGICH. Senator Isakson.

STATEMENT OF HON. JOHNNY ISAKSON, U.S. SENATOR FROM GEORGIA

Senator ISAKSON. Thank you, Mr. Chairman.

I'd like to ask unanimous consent that a complete statement that I want to issue in the record be printed and included in the record.

Senator BEGICH. Without objection.

[The prepared statement of Senator Isakson follows:]

PREPARED STATEMENT OF HON. JOHNNY ISAKSON, U.S. SENATOR FROM GEORGIA

Dr. Lubchenco, as we have discussed in the past, in order for studies regarding the Savannah Harbor Expansion Project (SHEP) to come to conclusion and the project to move forward, final decisions on pending issues relative to the environmental mitigation plans must be made.

The Corps of Engineers must have decisions from multiple Federal agencies including the Department of Commerce, NOAA, and National Marine Fisheries in order to complete the Final General Reevaluation Report and Environmental Impact Statement. The Corps and the agencies appear to be close to reaching an agreement on the project mitigation.

However, with respect to Commerce, NOAA and the National Marine Fisheries Service is recommending an unfeasible option of removing the New Savannah Bluff Lock & Dam as a component of SHEP in order to improve spawning habitats for the shortnose sturgeon.

Although the Corps of Engineers has proposed fish by-pass or "fish ladder" around the dam, NOAA and NMFS have settled on removal of the dam. The New Savannah Bluff dam provides an important reservoir used by both Georgia and South Carolina for water supply, recreation, and industrial use, and I have heard from a number of my constituents, including leadership of the communities affected by this, in opposition to this plan.

I have had a number of conversations with Secretary Locke and he and I share the view that the Department of Commerce must balance habitat protection with that of the economic development needs of this country. As he and I have discussed, and I think it is fair to say he shares this viewpoint, the Savannah Harbor Expansion Project is critical to the economic growth and recovery of the Southeast.

Savannah is a balanced, though slightly export dominant port. It is the fourth largest and fastest growing port in the country and the Savannah Harbor Expansion Project has been developed in an open and collaborative manner with coordination amongst Federal, state and nongovernmental entities.

Certainly, we must be able to come up with an out of the box approach to mitigation that will work for this project. I and my staff have a number of suggestions which we will submit to you in a written format for your consideration, and I hope you personally will take a look at them and get back to me as to why they may or may not be feasible. I am concerned though that NOAA and Marine Fisheries are now raising this issue so late in the process. I just don't understand why, if this is so important, it wasn't insisted upon more seriously back in 2000 when the fish passage was first discussed.

Senator ISAKSON. Dr. Lubchenco, thank you very much for being here, what you do, and thanks for our previous conversation before this testimony.

The statement that I've asked to be included in the record is regarding the Savannah Harbor Expansion Project on the Savannah River in Georgia with the home of the Port of Savannah.

As you know, in 1996, under the WRDA bill, expansion of that port was authorized. And in the 15 years since then, the State of Georgia has invested millions of dollars and the Corps of Engineers has invested significant money to do all the necessary planning, including the environmental impact study, to end up getting the authorization executed and expand the harbor of the Savannah Port.

That expansion is necessary because in 2014, the ships that will come through the newly expanded Panama Canal will come to the East Coast of the United States, and without a deepening of the channel, many of those ships will not be able to come to the Port of Savannah, which would be, obviously, bad for the Port of Savannah, but, quite frankly, since it's the second largest port on the

Eastern Seaboard, it would be bad for commerce in the United States.

Your agency, the Department of Commerce and National Marine Fisheries, all have final input on the environmental impact statement before that project can move forward.

Since 2000, there has been an issue with regard to the shortnose sturgeon, and NOAA has made a recommendation—very late in the game, I might add—that the solution to the shortnose sturgeon spawning at the new Savannah Bluff Lock and Dam is to tear the dam down.

That dam holds a reservoir that services many people in the state of Georgia for their drinking water and for recreation. And the Savannah River, which supplies water to both South Carolina and Georgia, had been, as recently as 3 years ago, through a Category 4 drought, which made water use absolutely essential and very limited.

So to destroy an impoundment like that would be bad for the health, safety and welfare and the existence of the human species, in terms of in South Carolina and Georgia.

The Corps of Engineers has made a recommendation of a fish bypass or a fish ladder to mitigate the problem to allow the sturgeons' concerns to be addressed, the human concerns to be addressed and the Port of Savannah to be expanded.

My request to you is if you would, as expeditiously as possible, meet with the appropriate people, including the Corps of Engineers and myself, if necessary, to work collaboratively to come up with a mitigation process for the sturgeon that does not cause such a draconian thing such as the destruction of the dam to take place and allows us to move forward on the Savannah River Harbor Expansion Project in the city of Savannah in the state of Georgia.

And I would very much appreciate your commitment to help us find a reasonable way to address the environmental concern and expand the port.

Dr. LUBCHENCO. Senator Isakson, you've rightly highlighted the importance of maritime commerce in our country. It is valued currently at around $700 billion and so really is vitally important to the nation.

I fully appreciate the importance of having capacity to accommodate Panamax vessels.

As you know, the analyses that we have done suggests that both the dredging and the hydrological changes that are expected to do the harbor expansion would have adverse impacts on the shortnose sturgeon populations and that, therefore, to mitigate for that adverse impact it would be appropriate for them to have access to upstream habitats.

The proposal that the Corps originally drew up for fish passages we believe would not adequately allow sturgeon to go upstream. We believe that the fish passages that the corps proposed are not wide enough and not deep enough and that there's not enough water flow.

Understanding the importance of all of the issues you raise, we have offered to work with the Corps of Engineers to see if there are alternative mitigation measures to accommodate all of those needs and we are happy to continue to have a dialogue with them.

I believe that the Section 7 consultation on both ESA and Essential Fish Habitat issues is due to be completed in June, but we will be working with the Corps, just as you suggest, because there are a range of very complex issues here.

Senator ISAKSON. Well, I appreciate that. And I'm going to steal a great idea that you had in your presentation. You held up a nickel. I want to hold up a dollar, which is 20 times a nickel.

And the revenue that comes to the United States of America and the income that helps us support this economy and pay for our budget, like at NOAA, comes from revenues that come from imports into this country and products we export in this country. So there's a cost-benefit analysis on this port expansion equal to the cost-benefit analysis of all that NOAA provides. And that was a great analogy with the nickel.

So this is not just a home-state issue. This is about the commerce of the United States of America and the access of our ports on the Eastern Seaboard and what that produces in revenue to the country.

So as you are working to find a suitable mitigation process that avoids blowing up a dam and destroying a reservoir, which I hope we can, understand this is critical to the commerce of the country, not just the State of Georgia.

Dr. LUBCHENCO. I understand, senator.

Senator ISAKSON. Thank you.

Senator BEGICH. Thank you very much, Senator Isakson.

Let me—I want to follow that. I don't know what I have in my pocket. I might have a five or a ten, but I—you know, Alaska's a little larger in size, but let me follow up.

And it's a continuing issue, as you know, I've had with your agency and that is the economic analysis and tradeoffs. I mean, that's what was just played out by Senator Isakson, and how—and just brief because I have a series of questions here on other issues, but how do you or do you have analysis or process that analyzes the economic tradeoffs in situations like that or, as we've talked about, other type of species that may have impact to our fisheries or other types of industries, oil and gas, so forth?

Do you do that within your agency and do you have the resources to do it? And then, to follow that, is there ever a time that your agencies ever will say that the tradeoff or the mitigation is too much for what the national need of the project or the issue is?

Dr. LUBCHENCO. Mr. Chairman, I think the short answer is it depends, which I know is not very satisfying, but is the truth.

Some of the legislative mandates that we have require economic analyses. Magnuson-Stevens is one of those. And so we do routine economic analyses so that we understand the implications of a particular fishery regulation on the economics of the fishing industry, for example.

In other situations, an economic analysis is not required, and, in some cases, there is a mandate that is oblivious to economic impact. So it really varies considerably from one mandate to another, and, of course, our responsibilities cross so many different areas it really is quite variable from one to another.

We have historically had individuals that do routine economic analyses. Since my coming to NOAA, I've highlighted the need to

improve our capacity to do more and more sophisticated economic analyses in a broader way than was traditionally done, and we are currently, for example, searching for—we have a chief economic advisor and have been trying to enhance our capacity, to the extent that we are able with the resources that we have, to beef up the capacity to do that.

We also, fortunately, have access to economists in the Department of Commerce, have been working with them to identify areas where there are good synergies.

Senator BEGICH. Very good. Let me go to the Joint Polar Satellite System. As you know, in the Fiscal Year 2011, we tried to get some money back in. We were not successful.

What's the plan? As you know, the data gap that's going to occur there—and I forget what year. I want to say 2016, but I may be off a year there. What are the plans for the agency to try to fill that now that we're behind schedule because of that lack of funding?

Dr. LUBCHENCO. You're absolutely right, Mr. Chairman. Because the funds for JPSS, Joint Polar Satellite System, were not included in the year-long CR—at least to date, the one that's on the table for your consideration—that means that there will be a gap in data starting in 2017.

There is great uncertainty now with respect to what the fiscal future of this program is. So we're still in the process of doing planning to try to figure out how we can minimize the damage.

But I think it's safe to say that there will almost certainly be a gap in coverage that at this point looks like it may be at least 18 months, based on the fact that the launch date will now slip at least 18 months. So the earliest launch date that we are envisioning is September of 2016. And that would be if we would get resources in Fiscal Year 2012.

So there will be a data gap. That data gap will have very serious consequences to our ability to do severe storm warnings, long-term weather forecasts, search and rescue and good weather forecasts for your state.

Senator BEGICH. So let me—and I'll summarize and I have a series, but we'll flip back and forth here between the Ranking Member and myself on questions, but let me ask are you then on kind of a Plan B? Are you preparing some sort of—you know—here's the action plan we'll have to take?

I mean, we tried to get it into the Continuing Resolution. You can pretty much assume it's not coming in for 2011. So we're moving to the next stage.

Can you and will you be developing a plan of action, one, a timetable of impacts that will have across departments, and where, and if you have to buy data, and where you might have to get that and what that cost may be? And is that something you are preparing or will prepare? And will you share that, obviously, with the Committee?

Dr. LUBCHENCO. We do know what some of our options are, and they are quite limited.

Senator BEGICH. What are those?

Dr. LUBCHENCO. That's one of the challenges. There is no other polar-orbiting satellite that will be flying in the orbit that JPSS

was intended to fly in, and so that's why there will be a data gap. There isn't redundancy. This is not a situation where we have another satellite that——

Senator BEGICH. That you can buy off of or utilize.

Dr. LUBCHENCO. Exactly. There is a satellite that is in place now that's providing us with a lot of the very sophisticated capability that we have.

We have another one called NPP that is due to launch in September that will take the place of the one that's up there now when its lifespan is expended.

It's beyond that NPP period where there will be this gap. And there really isn't another alternative for replacement of that particular orbit.

Senator BEGICH. So is it fair to say—and then I'm going to ask the Ranking Member to continue with some of her questions, but let me ask is it fair to say, then, after 2016, for that period—and I think you said 16 months or——

Dr. LUBCHENCO. Eighteen.

Senator BEGICH. Eighteen months.

Dr. LUBCHENCO. At least.

Senator BEGICH. At least that there is no substitute because timing was the issue here.

Dr. LUBCHENCO. That's correct.

Senator BEGICH. Purchasing the satellite, putting it up and then hitting the orbit at the right time.

Dr. LUBCHENCO. We have to actually build——

Senator BEGICH. That's my simplistic——

Dr. LUBCHENCO. You build the satellite and you build the instruments and you have to test them and make sure that they work.

Senator BEGICH. And then you have to launch——

Dr. LUBCHENCO. And then you have to launch it.

Senator BEGICH. Right.

Dr. LUBCHENCO. And then once it's launched, you have to go through an 18-month period of checking everything out, making sure that it's working, having all of the instruments be calibrated, and so that's why there is this data gap.

Senator BEGICH. Can you provide to the Committee what impacts that would have on those 18 months, and then also to step to the next stage, because of this, what additional costs may be incurred now because of this inability to arrive at additional funding you needed? Can you provide that——

Dr. LUBCHENCO. We would be happy to do that.

I can tell you now that for every dollar that we didn't spend this year on JPSS, we will need to spend $3 to $5 down the road, because——

Senator BEGICH. OK. Can you—Go ahead. I'm sorry.

Dr. LUBCHENCO. We have to cancel the contracts. We have to let people go. These are very sophisticated, skilled workers. And then you need to bring the programs back up. So I'd be happy to provide that to the Committee.

Senator BEGICH. And if you can provide in that response the cost, if there is contract-termination cost to the private contractor for construction and building, the employee issue and just kind of——

Doesn't have to be long and lengthy, but a good detail on the costing and what additional costs will be incurred, because I think a lot of times when we deal with these budgets, we have to understand that if we don't spend it now that nickel turns into a dollar very quickly.

Dr. LUBCHENCO. Yes.

Senator BEGICH. So if you could do that, I'd appreciate that.

I have a series of other questions. I'll turn to Ranking Member Snowe. We'll do about 10 minutes each, so we have a little bit of flexibility here.

Senator SNOWE. Thank you, Mr. Chairman.

Administrator Lubchenco, I just wanted to raise a concern about the petition that NOAA is currently considering to list the bluefin tuna under the endangered species, and I know I've written to you just a couple of weeks ago on this issue. So I hope that we can at least discuss this issue today, because it obviously has serious implications for domestic industry, and there are obviously some serious concerns if we attempt to manage this species both through both ICCAT as well as through the Endangered Species Act.

Already, there are serious limitations with respect to our industry, frankly. I mean, we adhered to some very tough standards, unlike many of our counterparts in other countries, and we certainly have the strictest standards.

So can you give me today, and the Committee, your thinking on the ESA listing petition currently?

Dr. LUBCHENCO. Senator, I can bring you up to speed—where we are in the process. As you know, we received a petition on May 24, 2010 from the Center for Biological Diversity, and we are currently doing what's called a status review in response to that petition.

And that status review, because of the information in the petition and the agency's files, indicate that a listing may be warranted, and, therefore, we are conducting a status review.

We have one year to do that status review, so in May that period will be up. I do not know what that status review is saying. We will let you know when we have something to share on that.

Senator SNOWE. OK. So, at that point, when the year is up in May, then you will have a recommendation——

Dr. LUBCHENCO. We would——

Senator SNOWE.—based on the information?

Dr. LUBCHENCO. I'm sorry.

Senator SNOWE. Yes, it would be the information that would be completed or also the decision regarding that listing?

Dr. LUBCHENCO. So, at that point, we would have a proposed rule that would go out for public comment.

Senator SNOWE. Wow.

Dr. LUBCHENCO. For the full-on public comment period. And then we would take that into consideration in making any final determination.

Senator SNOWE. Well, that's certainly a double whammy if this industry is managed both through, obviously, the international organization and then, at the same time, under the Endangered Species Act, because it's a highly migratory species, as you know.

And so here we are adhering to the strict standards, and this effort could be transferred to other countries that don't adhere to the

same kind of standards we do, and yet it's being managed internationally, and then, at the same time, we're being affected if there is a listing.

Dr. LUBCHENCO. I understand. And, as you know, we have worked diligently with ICCAT, the international regional fishery management organization, to bring those other countries who also fish on bluefin into much greater compliance and to have them adhere to many of our standards. We're making some progress in that, but not enough, but we have been working very diligently on that.

Senator SNOWE. Under the law concerning the listing under ESA is it a very strict process that you have to adhere to? For example, in the status review, I mean, is it all encompassing? Is it delineated under law through regulations exactly what you have to review that would prompt proposing a rule?

Dr. LUBCHENCO. I'm not sure exactly what you're asking, senator. There are things that we have to take into—I mean, we have to make a determination about whether a species meets the criteria for a listing.

Senator SNOWE. And I'm not so certain that that's always abundantly clear.

Between the status review and proposing a rule, there seems to be no other period. I mean, it just goes from one to the other. That's a quantum leap into a proposed rulemaking from a status review, because once you trigger that rulemaking process, that's it. It's over.

I mean, it's a very difficult process, and I just wonder if there's an interim period by which everybody can reflect on the status review before it prompts a rulemaking.

Dr. LUBCHENCO. Senator, I'm not certain about that, but I will find out and get back to you.

Senator SNOWE. I appreciate it and thank——

Senator BEGICH. Can I ask one quick——

Senator SNOWE. Yes, you may.

Senator BEGICH. Should there be?

Senator SNOWE. Yes.

Senator BEGICH. Should there be?

Dr. LUBCHENCO. I don't know the answer to that.

Senator SNOWE. Yes. Well, let's explore that based on what the answer is, because it seems to me there could be some issues at stake or in dispute or a conflict before it even warrants a rulemaking process, because that obviously triggers so many other issues and timeframes.

Dr. LUBCHENCO. Right. I understand what you're saying. We'll find out.

Senator SNOWE. OK. Thank you.

Dr. LUBCHENCO. We'll get back to you.

Senator SNOWE. On the implementation of the Department of Commerce inspector general report on the Office of Law Enforcement within NMFS, as you know, that was conducted six months ago, and I know that your office has issued corrective actions including a freeze of criminal investigators within the Office of Legal Enforcement.

Couldn't we go beyond a freeze and make some reductions, because it really does open the question as to why this office should have 149 personnel dedicated to criminal enforcement actions when most of the activity is 98 percent non-criminal.

Why is it such a high level of criminal investigators, which I guess 90 percent of the personnel are constituted as criminal investigators. So why is that such a high number and couldn't we reduce that number?

Dr. LUBCHENCO. Senator, the inspector general recommended that we look at that very closely, and we did two things. I did two things immediately. One was to freeze any hiring of new criminal investigators and also initiated a workforce review to really take a step back and say, What is the right balance of criminal versus civil agents that we need to actually do the job that they are supposed to do?

We are close to completing that workforce analysis, and I would be delighted to share the analyses with you when we have that.

I think that we will be able to make adjustments according to this analysis, and I think that it will most definitely strengthen our ability to do good law enforcement, which, in fact, is vitally important, because the fishermen who are abiding by the rules need to know that the rules are being enforced.

And one of the things that has come from this attention are pleas from many parts of the country saying, please don't have this undermine the importance of having effective law enforcement. We don't want it to be out of hand, but we need to have good law enforcement, especially when it comes to international fisheries.

Senator SNOWE. I don't dispute that. I think that, obviously, the results of the reports speak in themselves in terms of what happened in our region——

Dr. LUBCHENCO. Yes.

Senator SNOWE.—of the country, where the penalties and fines were twice as high. So that was egregious and indisputable.

So I would hope that it would be proportionate in terms of how we construct the workforce——

Dr. LUBCHENCO. Yes.

Senator SNOWE.—composition and whether or not it's necessary. It sounds to me a little disproportionate given the level of non-criminal actions as opposed to criminal and having 90 percent of the personnel——

Dr. LUBCHENCO. That's exactly why we initiated the review. And, of course, that's just one of many of the things that we have underway in response to the IG reports.

Senator SNOWE. Well, I'd like to have the benefit of that review. When will that be completed?

Dr. LUBCHENCO. Senator, I don't remember the time frame on that, but it's soon, and I'll get back to you on that.

Senator SNOWE. Well, I hope that we would have a consideration of reductions in that category, given the fact we're having to grapple with so many issues in reductions overall. I mean, this seems to me one of the areas in which we could have some reductions that may not warrant the level of criminal investigators.

I'll look forward to your review.

Dr. LUBCHENCO. OK.

Senator SNOWE. Thank you, Mr. Chairman.

Senator BEGICH. Let me follow up on that. I always get nervous—no disrespect, Dr. Lubchenco—when administrators use the word soon. Can you let the Committee know tomorrow when you expect that report to be completed?

Dr. LUBCHENCO. I will certainly do that.

Senator BEGICH. OK. Good. Not that I've been on this side in the Federal Government, but I've been in that side from the Municipality of Anchorage. We would also use the word soon quite a bit, and so now I'm on this side, I get to ask what does soon mean? So if you could let us know that would be appreciated.

Let me follow up, if I can, on one of the issues that was brought up on the $15 million increase to expand stock assessments, which I think is very important, I think for a lot of reasons you already detailed. I know in Alaska it's been a huge piece of the equation in ensuring that we have long-term sustainable fisheries.

But I'm getting some reports that there is reduction of sea time for the research or the vessels in Alaska, as one example. So I'm trying to make sure I understand, as you increase the assessments, what will happen to sea time for the vessels? Because if they're stagnant or decreasing, then there is, at least in my mind, a disconnect here.

So can you help me out? What does the new budget do for sea time for NOAA research vessels and so forth?

Dr. LUBCHENCO. Senator, the vessels, the days at sea and the vessels support a number of important functions. One of them are fishery surveys.

Senator BEGICH. Correct.

Dr. LUBCHENCO. But there are also hydrological surveys, the mapping for nautical charts, for example, oceanographic and climate research. Those are all functions provided by different ships, and, as you know, some ships do some and some do another.

In general, the increasing costs of operating on the ocean and greater constraints in our budgets are resulting in very significant challenges to the number of days at sea that we have that we are able to operate.

Senator BEGICH. But isn't it pretty important to have—as you increase the assessments, especially the budget, you've got to have more sea time.

Dr. LUBCHENCO. Correct.

Senator BEGICH. So this is the issue that when we met in my office that I'm concerned about and that is as we think of new items, new projects—and we'll get into the spatial planning in a minute—but there's $20 million there that is being spent, but yet we have less sea time because of costs.

I would argue the core mission or one of the core missions of your office is this data. It is why the Northeast is having issues. It is why we have been successful in creating sustainable fisheries is the data has been very important for us.

So if you're increasing that budget, but you're decreasing not just the stock assessments—because I also, on mapping, you know, I don't know what century we'll be done with mapping, but at the rate we're going, my bet is it will be decades from now, and by then, if we take all the issues of climate change into account, we'll

be back into mapping again. We're so far behind on mapping. So but if you're reducing all the sea time down in the vessels, then how will you accomplish some of the main goals?

And then I would argue that here, then we're going over here and spending $28 million on spatial planning when we're now having a problem here.

By your statement, it sounds like we don't have enough money to get the sea time we need for all the different functions of NOAA. Is that fair to say?

Dr. LUBCHENCO. Senator, it's probably fair to say we don't have enough money to do a lot of the things that we think are important.

Senator BEGICH. But is that an important piece of your core mission?

Dr. LUBCHENCO. Oh, absolutely.

Senator BEGICH. OK. So here's what I'm struggling with as we deal with these budgets—And, as you know, I think NOAA has a lot of important responsibilities, but we just don't have the money. So how do we manage this in a way that gets to our core mission?

If we are losing valuable sea time for all these different functions of NOAA, then it means each element of your core business that you do will be harmed, but, at the same time, we're doing some new initiatives.

We could argue that new initiatives are important. You know, we can argue that in Alaska we have a different view on it, but I know in the Northeast they have a different view, but, at the end of the day, we have to make some choices, and they're hard choices.

And the worry that I have—be very frank with you—is when left to us, we will have these traumatic choices, as proven by the satellite, not funding it. And that will cost us three to one to pay it back or put it back into the system.

So what I'm trying to do is say to you we need your help to figure out these priorities, knowing you do not have and will not have the money at the level that will be necessary. And sea time is critical for the work you do. And I use my phrase, maybe you might have a different phase as critical, but I think it's critical.

Dr. LUBCHENCO. Yes.

Senator BEGICH. So how do we do this? And what choices are we going to have to make? And what choices would you make with us to keep your core mission active? Because that——

Dr. LUBCHENCO. Senator, the request for the increase in $15 million in stock assessments is exactly for the reasons that you've highlighted. It's very important, and part of that includes days at sea. The other thing that we are including——

Senator BEGICH. Will days at sea increase——

Dr. LUBCHENCO. Some of that budget includes funds to pay for days at sea. In addition——

Senator BEGICH. Well, does it increase days at sea?

Dr. LUBCHENCO. Well, it funds——

Senator BEGICH. I understand it funds days at sea, probably increased cost, but does it increase the amount of days at sea——

Dr. LUBCHENCO. The days at sea are, for a variety of purposes——

Senator BEGICH. Understood.

Dr. LUBCHENCO. The fisheries budget includes funds for fishery stock assessments and some of that is for the days at sea required to do that.

In addition to that, the Fiscal Year 2012 request has a request for funding for critical maintenance of vessels. That's $9.56 million for that, which will also assist with this particular problem.

Senator BEGICH. Is that the maintenance of the infrastructure as well as operational or is it just the maintenance of the structures?

Dr. LUBCHENCO. It's the vessels themselves.

Senator BEGICH. OK. Let me ask you this, if you can provide this document for the different components of NOAA, as you described, that require days at sea can you give me—give the Committee a report of the last three years and what you project for 2011 as it comes to completion and 2012 in your budget of how many days at sea you'll have for the different operations that NOAA is required to do?

Dr. LUBCHENCO. We can do that.

Senator BEGICH. OK. You know, sometimes I need it very simple, and that's probably the simplest, just so I can see how many days of operation you're doing, and that will then probably beg some other questions, if that's OK.

Let me go to the—and this is interesting because of the conversation we just had on enforcement—IUU fishing, which, as you know, from Alaska's perspective, I mean, the number we put out there is the legal catches by Russia on crab, for example, was probably, in the last 10 years, costs Alaska fishermen over a half a billion, $500 million over the last 10 years.

Tell me kind of what the enforcement efforts you're doing out there, and are there issues outside of your kind of command and control that other agencies need to deal with—maybe the State Department, others—that we need to be aware of that we need to put some pressure on? But let me pause there and see if you can answer that.

Dr. LUBCHENCO. Mr. Chairman, within the U.S. exclusive economic zone, NOAA works closely with the Coast Guard to do enforcement of our fishery management laws. So Coast Guard is a key partner here.

When it comes to international waters, we work closely with the appropriate regional fishery management organizations to try to ensure the best compliance and monitoring possible.

Frankly, that varies significantly from one regional fishery management organization to another. Some countries are good partners in that, others, less so.

IUU is a very significant problem globally and we are doing what we can to address it, but I would just flag that that is a very real issue, especially on the high seas.

Senator BEGICH. Are there additional resources or legislative action or work with other departments, especially on the international waters, that we need to be doing?

If you have some that are cooperative, obviously, those are good relationships. The ones that are—You know, I would say Russia is not too cooperative, if we've lost a half-a-billion dollars, but you may have a—I don't know what the opinion of NOAA is on that, but that's my opinion.

So is there something that we need to be doing from a different perspective than just the budgetary-enforcement dollars here, something else we should be doing or that you would recommend or could come back to us and recommend?

Dr. LUBCHENCO. Mr. Chairman, I'm not sure what the other possibilities are. I know that the reauthorized Magnuson-Stevens Act does give us some authority, and we are absolutely using that, but there may, indeed, be some additional measures that we might want to have a discussion with you about.

I know that the Senate's International Fisheries Stewardship and Enforcement Act would actually be very helpful in this regard, and that's exactly the kind of——

Senator BEGICH. Tool you need or——

Dr. LUBCHENCO. Tool, exactly.

Senator BEGICH. OK. Well, let us look at that and we'll have some further discussion.

Let me go back to Senator Snowe for her——

Senator SNOWE. Thank you, Mr. Chairman. I just have one additional question that actually may involve Alaska, too.

[Laughter.]

Dr. LUBCHENCO. Bicoastal.

Senator SNOWE. Exactly. Is concerning the renewable energy siting, and, obviously—the agencies, NOAA recognizes and the challenges with global climate change.

And I commend you for the proposal to include in your budget the consolidation of all the climate research services under one umbrella. I think that's appropriate and so critical to the future challenges that we face, but also developing clean energy alternatives.

And I know that you have, obviously, a role to play in assessing the science behind the climate change, but also the environmental impact assessments of energy projects as well.

And, as I understand it, in the 2012 budget proposal there's a decrease for energy licensing and appeals program by 63 percent. And, for example, when we talk about clean energy technology, there is a company that's looking at developing world-class technology to harness the tidal power and energy, and that's both in Alaska and, of course, off the coast of Maine, but it has actually been slowed by NOAA and the U.S. Fishery and Wildlife.

Is there a reason for such a significant reduction when we're looking to actively pursue alternatives with clean energy?

Dr. LUBCHENCO. Senator, I don't know the answer to your question, but I'll find out.

Many of the reductions that are in our Fiscal Year 2012 request were a consequence of removing earmarks from previous budgets. So that's one possibility, but I don't know for sure in this case, and I will find out.

Senator SNOWE. Yes, because it's the overall licensing program. I'd be interested in knowing, because, obviously, this is a very important option for clean technology that has been pursued over the years, but it has some very specific technology that may be very viable, very effective. So I'd be interested in knowing, because I gather that's what's holding this program up.

Dr. LUBCHENCO. Senator, we do agree with you completely that renewable is very important for us to pursue. We believe that we

have an important role in helping to do the evaluations of tradeoffs as well as provide information to help siting decisions, be it wind or wave or tidal.

We also have—in the context of spatial planning, there is also an opportunity through the ways we are promoting spatial planning to consider the range of uses of different areas, and we've been developing new tools along with partners in the academic world to help do the kinds of analyses that will enable communities to evaluate the tradeoffs among different types of uses to identify potential conflicts.

And there's a new tool that's called Marine InVEST, which was developed at Stanford University as part of the Natural Capital Project in conjunction with NOAA and other partners, and one thing that they did recently with InVEST was to do an analysis for Vancouver Island in British Columbia.

The community there was interested in siting wave energy off the coast of Vancouver Island. They wanted to know which places would be the best places for generating energy, but also what the financial consequences would be. So they wanted an economic analysis of the tradeoffs. But they also wanted to avoid conflicts with fishing, existing fishing operations.

And so this tool allowed the community to understand what those tradeoffs were and to identify the site that was the best economically, based on the economic analyses, the most amount of wind to be generated, but also the one that would avoid conflicts with fishing.

And so instead of evaluating each different activity in a vacuum, one of the compelling arguments for marine spatial planning is to do a more holistic look at how do these activities effect one another, which ones are compatible and which ones aren't, and this tool allows us to do it.

So we're thinking not only of the tradeoffs for renewable energy, but how that fits into the larger picture of uses of ocean and coastal areas.

Senator SNOWE. The interesting part about all that is whether or not it would allow compatibility of all these different activities. At the same token, you're still dealing the permitting process involved.

Dr. LUBCHENCO. Absolutely.

Senator SNOWE. And that's another dimension.

Dr. LUBCHENCO. Well, that's one of the—again, one of the compelling arguments for having all of the—both the stakeholders and the regulators together from the outset, both the feds and the states to work together on plans that don't have any regulatory authority, but that can streamline the kinds of regulations.

And, as you know, there are more than 140 different statutes and regulations just on the Federal side that affect activities in the ocean. And to have a protocol and methodology for considering those together as they affect a particular place just makes a lot of sense in making things go more efficiently, more effectively, more economically.

And this particular example was a case in point where, for British Columbia, that process actually worked very nicely.

Senator SNOWE. Thank you. Well, I appreciate that. And thank you for also getting back to me on that particular question. Thank you, Mr. Chairman.

Senator BEGICH. Thank you very much.

Just a few more questions and then I think—unless the Ranking Member has some additional ones, but let me——

In Alaska, you know, we don't really have an issue on overfished stocks, but I know elsewhere there are some questions on the 10-year rebuilding timeline.

One, kind of what is the basis for the 10-year rebuilding timeline? Is there flexibility within it as we reach that 10-year rebuild? It's more—I know for the Northeast, there's a concern that we started to hear. So can you respond to that kind of what was the basis for the 10-year rebuild timeline, but also is there flexibility in it?

Dr. LUBCHENCO. Mr. Chairman, the 10-year rebuilding time frame was specified by Congress in the Magnuson-Stevens Act, and it applies to most, but not all—there were some exceptions that were articulated.

Senator BEGICH. Correct. Right.

Dr. LUBCHENCO. So that's why it's in there. That was part of the legislation.

Senator BEGICH. So not really. Maybe I should ask this: was there a scientific reason for the 10-year or just a legislative reason?

Dr. LUBCHENCO. It was a legislative reason.

Senator BEGICH. OK. So do you believe—I think I know the answer to this. Is there flexibility in that timeline, from your perspective as an agency, or will it take legislation to create flexibility?

Dr. LUBCHENCO. It's my understanding that we don't have the authority to change that.

Senator BEGICH. Got you. So from your perspective, in order to add time, it would take legislative action.

Dr. LUBCHENCO. As far as I am aware, yes. But I think it's important to recognize that much of the good progress that we are making in rebuilding fishing——

Senator BEGICH. Right.

Dr. LUBCHENCO.—is because we haven't gone down the road of extensions, extensions, extensions.

Senator BEGICH. I understand. I understand. I guess I would love to. Maybe another day we'll probably have this discussion a little more longer, but I just want to kind of flag that as an issue that's cropping up a little bit.

You know, from our perspective, from my state, it's not an issue, but I know there are other states that are starting to ask this question. So I just want to put that to you.

Let me, if I can, just go through a couple more and then I'll see if Senator Ayotte has some questions in regards to the budget.

Well, two things. One, this is a concern, and if you have a comment on this, as we're dealing in the national issue about the earthquake in Japan, the radiation issues, all that, we're starting to hear from wholesalers, fish wholesalers, concerned about Alaska fish stock, even though there are no signs of any kind of radiation impact, so forth.

Are you doing anything from NOAA's perspective on really an information campaign about our fish stocks? And the reason we're getting concerned, we already had one country indicate that, unless we go through a whole process of proving that we are not impacted by the radiation, that they won't be buying our product, which, of course, we're not being impacted. So the rumor mill around these issues can grow very rapidly.

Does NOAA have a plan to take aggressive action with our international trading partners around our fishing industry to ensure that they recognize that our fish are not impacted negatively?

Dr. LUBCHENCO. Mr. Chairman, NOAA has some responsibilities in the arena and some of our federal partners have other responsibilities.

Food and Drug Administration, FDA, has the responsibility for certifying the safety of seafood, and they have the lead in doing monitoring of fish that are coming into our ports, for example, from overseas. So they are the lead agency on that.

NOAA has been involved extensively in the modeling for both airborne radiation and ocean-borne radiation, any movement of oceans that are contaminated—ocean water that has been affected by radiation. So we are very keenly involved in that.

And, as you noted, the modeling shows that there is very little likely impact to American shores from airborne, and we believe the same is likely true from any radiation that is in the ocean. There's a significant degree of contamination, it appears, in the immediate area, but farther afield, it gets very dilute very, very rapidly. It's just a huge volume of water.

Nonetheless, I fully appreciate the need for consumers to want to know that their seafood is safe. What we have been doing in that regard is to—we've been having discussions with other federal agencies about the kind of monitoring of ocean water that we need to begin to do that's not currently in place adjacent to our shores.

So the Coast Guard and the Department of Homeland Security have the lead authority in that regard, and NOAA would be a supporting agency for that.

Senator BEGICH. Great. We'll put that on the Coast Guard's list when we see them next month then.

Let me—a couple more, and then, again, Senator Ayotte probably has some questions, too.

There is a pilot program the National Weather Service was kind of the lead on developing several pilot projects with employees on new weather services and forecasts around the country.

I'm getting reports that it just kind of isn't moving forward. I think there are about 15 or 20 of these pilot programs. Are you familiar with this? And, if not, we'll put something together and send it to you and maybe get your office to respond. But it seems like it just is not moving as aggressively as it was originally.

Dr. LUBCHENCO. So I'm not sure the programs that you're speaking of, but I'd be happy to respond to——

Senator BEGICH. Great.

Dr. LUBCHENCO. We'd need a little more information about what it is that you're talking about, but we'd be happy to respond.

Senator BEGICH. You bet. I'll put something together.

Let me end with one last question in regards to the—NOAA and Coast Guard have—pretty old fleets, to say the least. And I know yours is always—no disrespect to NOAA, but it's always Coast Guard always gets talked about first. Then they say, Oh, yes, NOAA, and we know both you have major issues with your fleets.

Can you tell me or maybe provide to the Committee kind of where you're at budgetary wise? I know you're making a request in 2012 for some money, but kind of where you're at and how many ships you have to finish out and how much money that will require based on today's dollars?

But, first, just kind of a—if you can give me a few sentences on kind of where you're at with—I know it's a money issue, but kind of can you give me that for the record and then maybe the document at a later time?

Dr. LUBCHENCO. We, as you know, did a fleet recapitalization plan in—I think it was 2006, but I'm not positive about that—that laid out what would be required to keep our fleet in good working order and doing the things that we needed to do.

Senator BEGICH. Right.

Dr. LUBCHENCO. The requests in the current budget are consistent with that plan. We are continuing to make requests for major vessel repair periods, for example.

Senator BEGICH. Correct.

Dr. LUBCHENCO. And to have requests for building, for example, new fishery survey vessels. I don't have all the details in my head, and I'd be happy to get them to you.

Senator BEGICH. That'd be great——

Dr. LUBCHENCO. It really is an issue of finances and trade-offs, and I think it has been challenging to date, and in the current fiscal climate where we fully appreciate the need to live within our means, it's going to be increasingly challenging.

Senator BEGICH. If you could, maybe, kind of show me kind of what the plan was and kind of where you are with the plan and then what you kind of project. I know it's hard to project too far out because the budget issues are so much in flux, but maybe help me understand kind of what that means.

And then if you have any commentary in that presentation back to us, if there are opportunities from the shipbuilder's perspective, if we had a more sustainable plan what that might mean in savings, because my understanding is from the shipbuilder is that if we actually had a plan that could be adhered to—in other words, not your fault. Congress's fault for not putting a robust funding mechanism to it—that there actually could be a planning and a real savings over the long haul over the ships, more likely the backend ships than the frontend, because of the workforce development.

Is that something you could kind of put together maybe with whoever is your contractors now and get some commentary from them?

Dr. LUBCHENCO. I think I understand what you're asking, and, yes, but we'd want to make sure that I know exactly what—it's the part of—with the contractors, that's the part I'm not sure about what you're asking.

Senator BEGICH. Let me make it—We know you need so many ships built.

Dr. LUBCHENCO. Right.

Senator BEGICH. And we know if you have a start-and-stop process, the contractors cannot really mobilize for that on a sustainable basis. So they kind of stop, start, stop, start. So there's a cost that they're incurring for retraining or like you described——

Dr. LUBCHENCO. Correct.

Senator BEGICH.—with one of your organizations where you have to let them go——

Dr. LUBCHENCO. Yes.

Senator BEGICH.—and then have to come back. There's a cost. And if we can quantify that, I think that's a helpful thing for us when we talk about a long-term capital budget of how to ensure that you get the resources, that there is a trade-off. If we don't do it by a plan, then here is—fill in the blank—the cost for not doing it. Even though we're going to build them over time, there are costs.

And I think the shipbuilders probably will know that because, as they gear up on how much training they need, if they can maintain that workforce for a period of time, there's a savings, but if they have to go like this with their workforce, then there's a cost.

Dr. LUBCHENCO. I understand now.

Senator BEGICH. Does that make sense?

Dr. LUBCHENCO. Absolutely.

Senator BEGICH. And I think they'll—I don't know how they do magic and they can quantify, and that's what I'm looking for is to quantify that.

Dr. LUBCHENCO. Yes. OK.

Senator BEGICH. Let me end there. Senator Ayotte.

STATEMENT OF HON. KELLY AYOTTE,
U.S. SENATOR FROM NEW HAMPSHIRE

Senator AYOTTE. Thank you very much, Mr. Chairman.

And I wanted to thank you, Dr. Lubchenco, for your testimony. I had several other hearings I had to be at, so if my questions are repetitive, I apologize in advance.

I just wanted to express concerns that have been rendered by colleagues of mine on both sides of the aisle about the catch share program.

The catch limits and sectors established by NOAA for the Northeast Multispecies Fishery Management Plan have represented significant obstacles for the fishing industry in my beautiful home state of New Hampshire, and because NOAA has been relying on—from my view and the fishermen in my state—incomplete and sometimes non-existent data, it's difficult for us to assess the agency's current basis for establishing the catch limits and assigning the catch shares.

NOAA has been measuring fish stocks and catch limit history in New Hampshire based on insufficient records, and I think the result for us and for our fishermen, who are great business people and just literally salt of the earth, and what they do is so important to not only our economy, but a tradition we want to preserve

in our state, subjecting this fishing industry to unnecessary and burdensome regulations.

Sustainable fisheries are in everyone's best interest, and New Hampshire's geographically-limited small fleet has been unable to fish beyond the closed areas established by regulation off the New Hampshire shore, causing a loss of close to 50 percent of the fleet during the past decade and a substantial loss of catch history for those who manage to stay in business. This puts us at a disadvantage in catch share allotments as it favors a place where you can have a good, well-documented history.

So as a follow up to that, I know that your budget request for 2012 includes $54 million for the catch share program, and that's increasing budgetary authority for $36.6 million over Fiscal Year 2010 levels.

So based on the feedback that you're hearing, I'm sure not only from myself for the State of New Hampshire, but other Members of Congress, can you tell me how those funds will be used and let us know also how does NOAA plan to correct the policies, so that these fishermen really aren't robbed of their livelihood, and, obviously, I think a very important not only livelihood, but tradition to our state and many others? So if you can address that, I'd very much appreciate that.

Dr. LUBCHENCO. Senator, thank you for the question. And fishing is a very important part of the heritage of many of our coastal states. You know, fishermen are small business owners. It's important economically to the country, especially to those states and especially to those counties. It's also important in putting food on our table. So for all those reasons, the goals of having sustainable fishing are paramount, and we want good jobs now and also good jobs in the future.

The Magnuson-Stevens Act requires us to regulate fishing and to do so in a way that can be sustained through time to end over fishing and to rebuild depleted fisheries. The annual catch limits that are put in place, consistent with the Magnuson-Stevens Act, are intended to do exactly that.

And those annual catch limits are based on the best available scientific information that we have, and that is something that we need to continually renew, which is why, in this year's budget, we have requested an increase of $15 million for fishery stock assessments, so we have the good information that feeds into setting the annual catch limits for each species.

Now, those catch limits apply regardless of whether a fishery is managed using catch shares or other tools more traditionally used, such as number of days at sea or bag limits or something else.

Catch shares, those programs are voluntary programs. They are not mandatory. The fishermen and the councils in each region make a decision based on the characteristics of a fishery whether that fishery is appropriate for a catch share management program.

The funds that NOAA provides then enable a council to design a catch share system that will be in place once the council decides for sure that that's what they want for that fishery.

So the requests for the funding in this year's budget are to go for those fisheries where councils have decided, the fishermen in-

cluded, that that's the kind of management system that they believe is appropriate for a particular fishery.

And there has been a lot of misconception about catch shares. It's not true that NOAA is imposing them on anyone. They're voluntary. The councils decide. And where they have been in place, the fishermen, by and large, believe that they have been very much to their benefit.

Fishermen have more latitude in deciding when to fish. They know how much quota they have for the year and they can go out when the market price is right, when the weather is good, when it's convenient for them.

It ends overfishing much more effectively than days at sea. Catch share programs typically don't exceed their quotas. And so there are many, many benefits to those programs, but they're not a panacea and they aren't appropriate for each and every fishery.

And so we really believe that the councils should have the right to decide for which fisheries catch shares are appropriate and which ones they are not appropriate for.

Senator AYOTTE. Well, Doctor, I appreciate your answer, but I can tell you that the fishermen in my state don't feel like this is a voluntary process, so to speak, and they also don't like the program and feel that it's basically putting them out of business.

So I think that this is an issue that crosses party lines. So I appreciate what you're saying, but I think that we here in Congress really have a responsibility to look at this and to do things differently, and that's why I'm concerned that even when we've looked at the regulatory oversight for NOAA, there are concerns about duplication in regulatory oversight, the dockside monitoring. The way that the reporting is being done for fishermen, too, has been very onerous.

So I guess I'm saying to you I, for one, want to make sure that we preserve the opportunities for our fishermen, and so I appreciate how you're describing it. It's just not the perspective that I'm certainly hearing from my constituents that I'm very deeply concerned about.

And, as a follow up to that, just to ask you about your overall budget, in looking at where the NOAA budget was from 2008 to the 2012 budget request, our calculations have that it's about 41 percent higher between 2008 and 2012. And this is a very fiscally-challenging time for our country with $14 trillion in debt.

So I would just like to understand how we get a 41 percent increase from 2008 to 2012 when we're all looking to make some difficult decisions around here in terms of getting our deficit in order, the debt that certainly threatens our country. So if you can help me understand that, I would really appreciate it.

Dr. LUBCHENCO. Senator, I do believe that we need to live within our means. These are very serious fiscal times. The deficit is real. We need to be addressing that.

The budget proposal that we have in the President's budget for Fiscal Year 2012 is, in fact, a very disciplined budget that has undergone very intense scrutiny and some very, very hard choices already. There were many more mandates that we have, many more things that people would like us to do that we did not include in this budget, because they weren't the highest priority. We cut out

a number of things that under normal times would have been very appropriate to fund.

Because of the diversity of our mandates, from providing weather forecasts and disaster warnings to managing fisheries, and all of the science that it takes to deliver that information, from the satellites that provide 93 percent of the information that go into our numerical models that give us our weather forecasts and disaster warnings——

Those satellites are very expensive, and some of the very significant increases that we have certainly in the Fiscal Year 2012 budget are due to those satellites. And those satellites, in turn, though, provide our ability to do the severe storm warnings, to tell your constituents when they have a major significant snowstorm coming their way, to provide the kind of fishery survey information that enables us to manage our fisheries responsibly.

So part of our challenge is managing that diversity of responsibilities that we have, and you see that reflected in what I believe is a very disciplined budget.

Senator AYOTTE. So just to follow up, if we go back and look at the breakdown, the primary driver in your costs is satellite, in terms of overall cost?

When I look at the drivers of a 41 percent increase, for example, if I compare 2008 to 2012, based on your testimony, the primary driver of that increase would be satellite costs?

Dr. LUBCHENCO. I haven't compared 2008 to 2012 that way. We could certainly do that. I can certainly tell you that the increase in satellites for between 2011 and 2012—Between 2010 and 2011 and 2012, certainly the largest single item were for satellites. And if you are interested in it, we can give you the breakdown on those numbers.

Senator AYOTTE. I actually would appreciate the breakdown on that. That would be very helpful to me.

Dr. LUBCHENCO. And a lot of people see those satellites and they think, satellites, what good is that to me? Why do I need your weather satellites? I've got the weather channel, for example.

But, in fact, the reality is that's where we get 93 percent of the information that goes into our weather forecasts, disaster warnings, et cetera. Plus, they give us information that enables maritime commerce to happen. It enables search and rescue.

So when your fishermen are out on the water, if they're in trouble and they activate an emergency transponder beacon, that beacon goes up to the satellite program that we're talking about, and then that's relayed to somebody on land to go out and help them.

So the satellites do a wide variety of things that are very important to saving lives and property and enabling commerce in our country. They're operational satellites. They're delivering information day in and day out that is vitally important for us to deliver on our mission.

Senator AYOTTE. Thank you very much, Doctor, and, you know, I want my fishermen to have the opportunity to utilize those satellites that we're going to be spending a lot of money on.

So I hope that we can continue to make sure that we address this issue of the catch share program, so that we maintain a viable

and thriving fishing industry. And I appreciate your testimony today.

Dr. LUBCHENCO. Thank you.

Senator BEGICH. Thank you, again, Dr. Lubchenco, and I would add also the joint effort with the weather satellites also for the military.

Dr. LUBCHENCO. Thank you.

Senator BEGICH. Very, very critical. As I know Senator Ayotte and I were at a military hearing in Armed Services and one of the issues with Libya was 3 days of inability to fly was because of weather, and it has a kind of a far-reaching—I think if I remember right, 2010 to 2012 was about a $600-million-plus increase just for the satellite segment of your $5.5 billion budget. So it's fairly significant in that equipment establishment.

Again, just for Senator Ayotte's information, I asked for some documentation on the satellites. So we're going to get some information in regards to the costs and some other things. So that will be used for the Committee.

Senator AYOTTE. Thank you very much, Mr. Chairman.

Senator BEGICH. Thank you.

Again, thank you for your time. Thank you for willing to go through this. I have some others. I'll just submit them for the record, and, if you get time, please respond to those. I appreciate it.

Again, thank you for all the work you do, and thank you to your staff that I know has to get very geared up and prepared for these events that we have here. So thank you very much.

Dr. LUBCHENCO. Thank you, Mr. Chairman. Appreciate it.

Senator BEGICH. Let me check someone's staff.

Again, thank you very much. The hearing is adjourned.

[Whereupon, at 4:06 p.m., the hearing was adjourned.]

APPENDIX

RESPONSES TO WRITTEN QUESTIONS SUBMITTED BY HON. JOHN D. ROCKEFELLER IV TO DR. JANE LUBCHENCO

Question 1. Dr. Lubchenco, there has been talk of "turning the corner" with regard to measures in place to end overfishing in U.S. waters in 2011. Would we be at this place today if Congress had decided not to fund key NMFS programs, including stock assessments, observers, cooperative research and survey and monitoring projects?

Answer. Funding from Congress for NOAA's National Marine Fisheries Service (NMFS) programs including stock assessments, observers, cooperative research, and survey and monitoring projects has been crucial toward ending overfishing in U.S. waters in 2011, and the U.S. would not be in this place today had Congress not funded these programs. Sustainability of our Nation's fisheries takes continual effort to monitor fisheries and update scientific information. With continued support, NMFS will make substantial progress toward science-based, effectively managed, and economically viable commercial and recreational fisheries that will benefit coastal communities and the Nation as a whole. The potential economic and social benefits of rebuilt fisheries that the U.S. stands to gain are considerable, including generating billions of dollars of economic activity across the broader U.S. economy, increased and more stable employment, sustainable working waterfronts, and economically resilient coastal communities.

Congressional support for expansion of stock assessments, observers, cooperative research and survey and monitoring projects has been an important factor in the detection, cessation, and prevention of overfishing. These programs allow detection of overfishing by analyzing trends in fish stock abundance relative to the historical level of catch, then forecast future levels of catch that would prevent overfishing and allow rebuilding if the stock has been depleted. Fishery management programs then establish Annual Catch Limits to control the catch below the overfishing level. Accurate and timely commercial and recreational fishery monitoring and observer programs then provide the information needed to track catch relative to the Annual Catch Limit and to determine when Accountability Measures need to be implemented. Subsequent assessments determine if overfishing has been successfully curtailed, track the rebuilding of overfished stocks, and forecast levels of sustainable catch for rebuilt and healthy stocks. Without the funding available today, NMFS would not be able to track most stocks and their fisheries beyond baseline monitoring, and it would not be able to attain optimum yield without great risk of substantial overfishing, which harms fishing communities and coastal ecosystems.

Question 2. How would the President's FY 2012 request address the need to improve the timeliness and frequency of fisheries stock assessments so that information can be more quickly incorporated into management decisions?

Answer. Stock assessments are based on: fishery-independent data on population trends, obtained from field surveys; and fishery-dependent data, obtained from landings data, fishery observers, and, where appropriate, from surveys of recreational fisheries. NMFS is taking several steps to increase operational efficiency and reduce the time between data collection and the application of the data to management decisions.

In the FY 2012 President's Request, NMFS is requesting $67.1 million to expand annual stock assessments, an increase of $15 million. The requested increase in funds will allow for a significant increase in the output capacity of stock assessments, which will allow optimum fishing opportunities in more fisheries without the risk of overfishing. Assessments of high priority stocks will be improved; updated assessments for stocks will be conducted more frequently; and additional fishery-independent surveys funded now will enable assessment of more stocks, including data poor stocks, 3–5 years from now. NMFS will conduct workshops to improve standardization and public understanding of assessment methods, and will conduct improved surveys using advanced technologies to estimate fish abundance in addi-

tional habitats. Advanced technologies will support near real-time processing of survey data as it is collected at sea and more rapid delivery of these data to shore-based analysts. and will build the capability to conduct new types of surveys for some currently data-poor stocks.

NMFS is also working to increase observer coverage and the number of staff available to process and manage the data collected by observers. This is important because observers collect high quality information on catch and bycatch that is directly incorporated into stock assessments. Biological samples such as ear bones (otoliths), fin rays, or vertebrae collected by observers are used to determine the age of fish, a critical component of high quality stock assessments. Unbiased, fishery-dependent catch and bycatch data from observer programs are also used in stock assessments.

Question 3. How would the President's budget improve recreational data collection—particularly in the Gulf of Mexico and South Atlantic regions?

Answer. Through its Marine Recreational Information Program (MRIP), NMFS is developing and testing new survey methodologies to improve the accuracy, geographic resolution and timeliness of recreational fishing catch and effort data. These improvements are necessary to support successful management of fisheries with Annual Catch Limits and Accountability Measures. The President's FY 2012 budget request includes an increase of $3 million to begin implementing improvements developed through MRIP, of which $1 million will support the phased implementation of electronic logbook reporting for charter boats and headboats, including for-hire vessels in the Southeast Region.

The remaining $2 million is requested to implement monthly, rather than bimonthly, surveys of shore and private and or rental boat fishing efforts that would support updates to catch estimates in the Southeast and Northeast Regions by the end of FY 2014.

Question 4. What progress has NMFS made toward ending overfishing and rebuilding depleted fish populations, and how would the President's FY 2012 requests further this progress?

Answer. Significant progress has been made in improving the status of fish stocks. Of the 81 stocks determined to be overfished between 2000 and 2010, 33 stocks are no longer overfished. Of the 76 stocks determined to be subject to overfishing in the same time period, 36 stocks are no longer subject to overfishing. In addition, 23 stocks have been rebuilt over this same time period. The Fish Stock Sustainability Index, (FSSI), an overall index of sustainability for 230 U.S. fish stocks selected for their importance to commercial and recreational fisheries increased by 63 percent over the last 10 years (from 357.5 to 583 points out of 920 possible points). The FSSI will continue to increase as regular stock assessments confirm that overfishing has ended and stocks rebuild to the levels that provide for maximum sustainable yield.

For fisheries subject to overfishing, the Regional Fishery Management Councils and NMFS have taken final actions to end overfishing and put Annual Catch Limits (ACL) in place, with 26 ACLs implemented in 2010. The Councils and NMFS are working to meet the 2011 deadline to have Annual Catch Limits included in Fishery Management Plans for all managed stocks. NOAA's FY 2012 budget request includes $7.6 million in the Magnuson-Stevens Act Implementation portion of the Fisheries Research and Management PPA for NMFS to support the establishment, monitoring, and compliance of Annual Catch Limits, and $5.6 million, split between the Regional Councils and Commissions PPA and the Fisheries Research and Management PPA, for the Councils to set, evaluate, and revise Annual Catch Limits and associated regulatory measures to end overfishing. The FY 2012 budget also provides also $62.1 million, an increase of $15.0 million, to increase the number of stocks with adequate assessments to help verify that overfishing is no longer occurring and safely allow optimum catch levels to be set to support the sustainability and economic vitality of the FSSI.

Question 5. What is NMFS currently doing to help fishermen and coastal communities with the economic transition to sustainability and how will FY 2012 appropriations impact those efforts?

Answer. NMFS is very concerned about the hardships that some fishermen and fishing communities have experienced recently as NMFS and the Regional Fishery Management Councils (Councils) work to fulfill the requirements of the Magnuson-Stevens Fishery Conservation & Management Act (Magnuson-Stevens Act) to end and prevent overfishing. As overfished stocks rebuild, it is anticipated that there will be more harvest opportunities as the stocks reach their sustainable abundance level. NMFS and the Councils work closely with fishermen and other stakeholders in a highly participatory public process during the development of fishery manage-

ment programs to minimize impacts to the industry and coastal communities. The Council process is highly adaptive and flexible allowing for new information to drive modifications to management measures. For example, if there is new scientific information that supports raising the catch limits, which could provide more opportunities for some fishermen to re-enter the fishery, then management options will be revisited through the Council process.

In addition, the FY 2012 President's Budget includes, in the National Ocean Service, a proposal for $8 million to create a working waterfronts grant program. This program will assist fishing-dependent coastal communities adversely affected by changes in the fishing industry on which they depend. This program will assist distressed or at-risk fishing communities by providing resources for communities to engage in planning, capacity building, and other activities. NMFS is also committed to working with fishermen, state and local governments, public and private nonprofit organizations, tribal entities, and others to help communities build their capacity to address long-term fishery and community sustainability by working across the Federal Government to provide technical assistance related to community economic development.

Catch shares are another management tool that NOAA supports where appropriate to achieve economically and biologically sustainable fisheries. Specifically, the NOAA policy recommends that Councils develop policies to take advantage of the special community provisions in section 303A of the Magnuson-Stevens Act. For example, New England Council actions are underway to assist small fishing communities including the States of Maine, New Hampshire, Massachusetts, and Rhode Island in establishing several permit banks of Northeast multispecies fishing vessel permits to provide small vessels and small communities with an opportunity to obtain additional quota or days-at-sea on the open market at a reduced cost.

NOAA is also seeking to increase loan authority in FY 2012 from $16 million to $24 million under NOAA's Fisheries Finance Program (FFP) to provide quota share loans in support of the catch shares program. The Magnuson-Stevens Act allows Councils to specify up to 25 percent of cost recovery fees be used for FFP loans to assist small operators and first time buyers of catch share privileges, thus lowering the threshold for entry. These programs, as authorized under the Magnuson-Stevens Act, are limited to entry-level fishermen and fishermen who fish from small boats. These loans can be used to purchase or refinance Individual Fishing Quota in these fisheries, but may not be used to acquire quota share beyond specific percentages within each fishery (*i.e.,* consistent with existing excessive share caps to limit consolidation). The financing supports a more competitive, market-oriented fishery that also helps to preserve sustainable yields in those fisheries over time.

Question 6. What does the agency estimate the economic benefits will be of rebuilding in FY 2012 and beyond?

Answer. NMFS estimates that if the stocks that are currently under rebuilding plans were rebuilt and all stocks were harvested at their maximum sustainable yield this could increase ex-vessel value by as much as $2.2 billion, and would generate an additional $31 billion in sales impacts and support 500,000 jobs across the broader economy.[1]

Question 7. Can you explain how information generated from NMFS data collection and analysis programs are used by fishermen and other fishery-related businesses in terms of their own business planning and investments?

Answer. NMFS provides time series information on prices and landing trends for commercially harvested species. The price information may be broken down by product form or product size, which provides fishermen information on the price differential associated with each form and size category. Coupled with landings information and information on inventory, fishermen can draw inferences on whether the market appears to be growing, is saturated, etc. In addition, NMFS provides information on trade data and trade patterns, which fishermen can use to identify new and emerging markets or to anticipate increased competition from imports.

Question 8. Recently, Senator Inouye reintroduced legislation to strengthen Federal consumer product safety programs and activities with respect to commercially marketed seafood. In your view, how would S. 50, the Commercial Seafood Consumer Protection Act, enhance the ability of NOAA and the Department of Commerce to ensure that commercially distributed seafood in the United States—par-

[1] Internal analysis using the National Marine Fisheries Service Commercial Fishing & Seafood Industry Input/Output Model. For additional information on this model, see "The NMFS Commercial Fishing & Seafood Industry Input/Output Model." available at *https://www.nmfs.noaa.gov/documents/Commercial Fishing IO Model.pdf.*

ticularly imported seafood—meets the food quality and safety requirements of applicable Federal laws?

Answer. The Commercial Seafood Consumer Protection Act would enhance the ability of NOAA and the Department of Commerce to support the safety of commercially distributed seafood in the United States. Section 4 would do this by increasing the capacity of NOAA labs to test seafood for safety and fraud, strengthening seafood inspection effectiveness and providing additional assurance that seafood products comply with applicable Federal laws. The bill would enhance NOAA's statutory authority to examine and test imported seafood and foreign facilities, increasing the percentage of imported seafood subject to inspection and testing as needed and consistent with U.S. international obligations, thereby enabling NOAA to be a more effective partner with FDA in ensuring seafood safety. Greater interagency coordination and leveraging of resources and expertise, as called for in the legislation, would also enhance seafood safety protections for U.S. consumers.

While there are sections of the bill that would enhance the Department's/NOAA's effectiveness in testing seafood, there are provisions in S. 50 that are duplicative or inconsistent with the Food Safety Modernization Act (FSMA). The final version of S. 50 should be clear that all seafood inspections and examinations conducted by NOAA in partnership with FDA must be scientifically valid with relative risk taken into account and in accordance with international obligations under WTO and SPS. Also, current language in S. 50 changes an existing standard for refusal of admission of imported seafood in a way that could limit FDA and NOAA's efforts to keep unsafe seafood out of the U.S. food supply. We look forward to the opportunity to work with Senator Inouye, the Committee, FDA and other agencies to ensure that new legislation that addresses problems already addressed by FSMA will not result in unnecessary duplication of efforts and administrative costs without appreciable public-health benefit, and that new legislation is consistent with U.S. international trade obligations.

Question 9. Leading scientists have argued that many depleted fish populations are capable of rebuilding in a 5-year time frame (see Safina, *et al., Science,* Vol. 309, July 29, 2005). Can it be concluded that the MSA's 10-year time frame—a time frame which is twice the amount of time the majority of populations require for rebuilding—represents a balance between rebuilding depleted stocks as quickly as possible and minimizing social and economic harm, and therefore is not arbitrary?

Answer. The statute requires that the time period for rebuilding be "as short as possible" and not to exceed 10 years in certain circumstances. The amount of time needed to rebuild fish stocks varies depending on the fish life history characteristics and reproductive capacity. For many highly productive stocks, 10 years is adequate time to rebuild, although many rebuilding timeframes are required to be shorter than 10 years. For stocks that cannot rebuild in 10 years, the National Standard 1 Guidelines provide a method to determine the maximum time to rebuild, still constrained by the overall directive that the time be "as short as possible." Of the 38 rebuilding plans with timeframes of 10 years or less, the majority provides for rebuilding and continued fishing opportunities.

Question 10. Isn't it true that Section 304(e)(4)(A)(ii) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) provides flexibility to extend the rebuilding timeframe beyond 10 years where the biology of the stock of fish, other environmental conditions, or management measures under an international agreement in which the United States participates dictate otherwise? Specifically, isn't it the case that the significant majority of stocks in rebuilding plans have timeframes for rebuilding that exceed 10 years, either as a result of the application of one or more of these exceptions or for other reasons, including the resetting of the start date for the rebuilding time frame, delay in rebuilding plan implementation, or the lack of a rebuilding timeframe end date because of lack of data?

Answer. Within the constraint that rebuilding timeframes be "as short as possible," the Magnuson-Stevens Act and the National Standard 1 Guidelines provide flexibility in rebuilding timeframes to consider the biological needs of the species, as well as the social and economic needs of fishing communities. More specifically, National Standard 1 Guidelines provide that for stocks that cannot rebuild in 10 years, the maximum time to rebuild is based on the productive capacity of the stock. Many rebuilding plans for overfished stocks exceed 10 years; the longest of which is 100 years. There are 64 rebuilding plans (past and current) with specified timelines; additionally, there are 1 past and 8 current rebuilding plans with no specified timelines. Out of 64 rebuilding plans with specified timelines, both past and current, 26 (41 percent) have or had rebuilding timeframes that exceed 10 years, and the average rebuilding plan time-frame was 21 years.

Question 11. How many fish stocks are under 10 year rebuilding timeframes that have been restarted or extended since they first went into effect? What's the average length of time that they've been extended for and/or the number of times the clock has been restarted? For example, in the case of south Atlantic black sea bass, how many times has the 10 year rebuilding time-frame been extended or the clock restarted?

Answer. South Atlantic Black Sea Bass and Mid Atlantic Summer Flounder are the only two formal rebuilding plans under Section 304(e)(4)(A) of the Magnuson-Stevens Act that were originally 10 years or fewer and were extended. For South Atlantic Sea Bass, the rebuilding plan was revised in 2006 to create a 10-year rebuilding program in compliance with Section 304(e)(4)(A), as the original rebuilding plan timeline was created prior to the rebuilding amendments to the Magnuson-Stevens Act. The Mid Atlantic Summer Flounder rebuilding plan was Congressionally-extended from a 10-year plan to a 13-year plan as part of the reauthorization of the Magnuson-Stevens Act in 2006, based on the status and biology of the stock and the rate of rebuilding.

Question 12. How many have stocks been already rebuilt pursuant to the 10 year rebuilding requirement? How many are almost rebuilt?

Answer. Eighteen stocks have already been rebuilt under rebuilding plans that were 10 years or less. Twenty stocks are under rebuilding plans that are no more than 10 years; 25 stocks are under rebuilding plans that are more than 10 years; and another 8 stocks are under rebuilding plans that have no estimated time to rebuild because there is insufficient information to estimate rebuilding time. In each case, the length of the rebuilding plan is "as short as possible" taking into account the following criteria: the status and biology of the stock, the needs of fishing communities, recommendations by international organizations in which the U.S. participates, and interaction of the stock within the marine ecosystem. Of the 20 stocks under rebuilding plans that are no more than 10 years, the abundance of five stocks has increased such that they are no longer considered overfished, and one of these stocks is above 80 percent of the fully rebuilt level. Overall, of the 53 rebuilding stocks, 14 are no longer overfished, and three of these are above 80 percent of the rebuilt biomass level. As their abundance continues to increase toward the level that supports the maximum sustainable yield, annual catch amounts can also increase.

Question 13. Does NOAA have current repositories of historical weather data other than those contained in the Climate Database Modernization Program?

Answer. The Climate Database Modernization Program (CDMP) is not a data repository, but a means to rescue data that is at risk of loss by converting it to electronic form and placing the rescued data in NOAA's Comprehensive Large Array-data Stewardship System (CLASS). CLASS is NOAA's data repository. Along with NOAA's National Oceanographic Data Center and the National Geophysical Data Center, the National Climatic Data Center (NCDC) places its data in CLASS, making CLASS the Nation's repository for historical U.S. and international weather and climate, oceanographic, and geophysical data.

Question 14. Is it an agency priority to ensure that scientists have access to data that includes a broad historical perspective from the earliest recorded weather observations? Is such data useful to today's climate scientists, as they seek to build models off current data that can help predict future climate change?

Answer. Yes, and yes. Part of NOAA's mission and a priority for the agency is providing comprehensive, accessible, timely, and reliable climate and historical weather data and information, and being a trusted objective authority on climate monitoring. NCDC provides long-term preservation, stewardship, and access to the Nation's resource of global climate and historical weather and climate data going back to the 16th Century and includes pre-instrument paleoclimate data such as ice rings, tree rings, and coral cores going back thousands of years. NOAA provides access to all its data holdings to the public and scientific community. These data are invaluable to the scientific community, providing the means to document the past behavior of the climate system, and are used as benchmarks for verifying the climate models used to project future changes in climate.

Over 2.5 petabytes (PB) of data are now directly accessible from NCDC's website (*www.ncdc.noaa.gov*). 1,098 TB of data were delivered on-line during FY 2010, with over 800 million hits and downloads from NCDC's website during that time; a nearly 50 percent increase over the same period in FY 2009. Several factors account for this increase, including: continued infrastructure improvements at NCDC to accommodate user demand, the Climate Services Portal prototype release in the second quarter of FY 2010 (*www.climate.gov*), and access to large volumes of Climate Forecast System Reanalysis data via the NOAA National Climate Model Portal (NCMP) (over 125 million downloads, and 465 TB of data) in FY 2010. NOAA climate data

users and data requests-retrievals are placed into four general categories: Business 44 percent, Public 33 percent, U.S. Government 12 percent, and Academia 10 percent.

NCDC, in partnership with other agencies, continues to improve web-based, on-line, real-time access to many of the digitized data and near real time access to data stored on the tape library system. New web-based "portals" are on-line and being improved to ensure easy and convenient access, search, and retrieval by users. The increase in the accessibility of these long-term records is helping researchers worldwide and is useful to today's climate scientists, as they seek to build better models from current data and long term historical data that can help improve future climate variation and change predictions.

For those who are not ready or choose not to use the on-line access system, requests are serviced by customer specialists and the information is provided by other means. In FY 2010, 71,540 paper subscription copies, CD ROMs and DVDs, etc. were issued.

Question 15. Now that the FY 2011 appropriations agreement is in place, how does NOAA intend to continue the work of the Climate Database Modernization Program without interruption?

Answer. NOAA intends to allocate $4.1 million for CDMP work in FY 2011, the funding that was requested in the President's FY 2011 Budget request. At this level of funding, the CDMP work will support imaging and keying of current NWS observations that continue to arrive on paper forms. At this level of funding, there will be no further data rescue or conversion of historical records from analog, paper and microfiche to digital formats.

Question 16. Absent the Climate Database Modernization Program, how would NOAA provide historical weather data preservation services and requests for historical data sets to U.S. regional climate centers, state and local planning offices, universities, climate researchers, state climatologists, the World Metrological Organization, and meteorological services in Europe, Africa, Asia, and North America?

Answer. The NOAA Data Centers will continue to provide access to all historical weather data in both the digital and physical archives. However, absent the Climate Database Modernization Program, the digitization of historical weather records for data preservation and online access will cease.

Question 17. Do you agree with the National Academies of Science observation that the new method in climate science—reanalysis—is important to NOAA's and other's efforts to understand and model climate effects? Is the Climate Data Modernization Program an important tool in NOAA supporting the use of reanalysis in the climate science community?

Answer. Reanalysis is an essential tool for climate science as it provides a physically complete and historically continuous representation of the global climate system. Historical observations are the indispensable input that draws the climate model solution into alignment with the known state of the environment in order to create the reanalysis. The Climate Database Modernization Program has contributed millions of observations in support of reanalysis projects, such as:

- Upper Air Data Recovery (CHUAN)
  http://journals.ametsoc.org/doi/abs/10.1175/2009BAMS2852.1;
- Re-analysis
  http://onlinelibrary.wiley.com/doi/10.1002/qj.776/abstract;
- Century Reanalysis Project
  http://www.esrl.noaa.gov/psd/data/20thC_Rean/;
- Atmospheric Circulation Reconstructions over the Earth (ACRE)
  http://www.met-acre.org/;
- 20th Century Reanalysis (20CR) dataset
  http://onlinelibrary.wiley.com/doi/10.1002/qj.776/abstract

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. MARIA CANTWELL TO DR. JANE LUBCHENCO

Question 1. If the relocation of the Marine Operations Center-Pacific (MOC–P) to Newport, Oregon proceeds as planned, what expenditures do you anticipate related to that move, and from what *specific* accounts within NOAA's budget will those costs be paid?

Answer. The relocation to Newport, Oregon is complete, the facility complete, occupied and fully operational. Costs for the lease and move of employees were paid from the Marine Operations ORF (Operations, Research, and Facilities) account.

Question 2. NOAA Operation funds took a serious (>97 percent) cut in the FY 2011, receiving only 3.185 million which is 119 million below FY 2010. How is this cut impacting the MOC–P move? If funding for the move is not coming from this account, what *specific* accounts are funding the MOC–P move?

Answer. The FY 2011 appropriation did not impact funding for the MOC–P move. Funding for the MOC–P move was paid for from the Marine Operations ORF (Operations, Research, and Facilities) account.

Question 3. Do you anticipate ANY increased expenditures or costs related to a MOC–P move to Newport, Oregon (either direct or indirect) in FY 2011 and FY 2012 that will be incurred to accounts outside of the Office of Marine and Aviation Operations? If so, what accounts/programs, for how much, and for what?

Answer. OMAO does not expect any other direct or indirect costs outside of the OMAO accounts.

Question 4. With the rise in transportation costs (gas price increase as one example) has NOAA revisited a cost analysis to the Newport move? Has NOAA revisited estimates of the annual operating costs after the move has taken place (transportation to airports and the fleet for example)? What specific account will these one-time and ongoing costs come from?

Answer. OMAO did an analysis of the one time and ongoing costs in 2009. No reanalysis has occurred as the lease has been signed and NOAA executed the move of MOC–P from Seattle to Newport in accordance with lease requirements. Costs will be paid from Marine Services ORF account.

Question 5. As many as 80 NOAA-employed families have decided to remain in the Seattle area and "commute" to Newport. Will NOAA compensate employees for transportation costs between Newport and Seattle? If so, were these costs built into the overall MOC–P cost estimate?

Answer. Where an OMAO employee chooses to maintain a residence is a personal decision. Since this would be personally identifiable information, OMAO Human Resources is not at liberty to disclose the location of individual's residences. However it is not accurate that 80 employees are commuting to Newport from Seattle.

Seattle will no longer be a duty station for any MOC–P employee. The civilian employees assigned to work in the facility at Newport will have a duty station assigned of Newport, OR and will not be compensated for commuting if they choose not to relocate. Seattle ship based personnel who have a duty station of Seattle will need to elect a duty station other than Seattle. As is current practice, ship based employees who choose a residence other than the homeport of the ship, are responsible for any commuting expenses to the ship's homeport. All employees assigned to either the Marine Center or a Seattle based ship are entitled to relocation expenses.

Question 6. NOAA scientists have raised concerns about the vulnerability of the Newport harbor to Tsunamis, because Newport Harbor is more vulnerable than the Seattle harbor. Is NOAA planning to add infrastructure in Newport to protect the fleet? How much will this infrastructure cost? What specific line office, program, and account will this funding coming from?

Answer. There are no plans to add infrastructure at this time. MOC–P employees are covered within NOAA's existing Tsunami response plans for Newport, OR including necessary evacuation procedures.

Question 7. The National Marine Fisheries Service released a recovery plan for Puget Sound southern resident orcas in January 2008 that outlines the problems facing this orca population and the proposed actions to delist the species. The Report says the cost to delist southern resident orcas will be at least $50 million over 28 years. What is the amount of funding included in the FY 2012 NOAA budget devoted specifically for efforts called for under the Puget Sound Southern Resident Orca Recovery Plan?

Answer. Fiscal Year 2012 funding for orca recovery is currently $1.052 million. Based on the life history of orcas and the nature of the threats, progress toward recovery will be a long-term effort which could take 28 years or more. NMFS strives to identify the highest priority and most cost-effective research and recovery actions to fund and ensure that we are contributing to the recovery of the Southern Residents and moving toward our goal of delisting.

The Southern Resident Orca Whale research program funding distribution to the NMFS Northwest Fisheries Science Center has remained at approximately $750,000 per year since FY 2008. The NMFS Northwest Regional Office receives approximately $250,000 per year for management. This does not include the values of support from NOAA ships for the offshore winter research when vessel time is made available.

There are no specific increases for Orca research in the protected species budget lines in the FY 2012 request; however NMFS anticipates that funding needs for this program should remain constant in 2012.

Question 8. Does this funding level put us on track to delist the species within 28 years as the recovery plan states?

Answer. The FY 2012 funding level will assist researchers at the NMFS Northwest Fisheries Science Center as they continue to advance their understanding of the population of Southern Resident Killer Whales, their behaviors, prey and habits, which will contribute directly to the management of the population to achieve recovery goals of the plan. There is an ongoing need for at-sea data collection to monitor and assess the status of the stocks and their use of habitat especially during the winter months.

While some of the $50 million cost of recovery is attributed to actions for which NOAA is the lead responsible party, many of the actions include other responsible parties as well. Recovery of the Southern Residents will require contributions from a variety of government agencies and stakeholder groups as identified in the Recovery Plan. With specific funding for killer whales that was available in 2003–2007, NMFS made gains in establishing a recovery program including designating critical habitat, completing the Recovery Plan, and implementing recovery actions. Now NMFS uses available resources to implement actions in the Recovery Plan. NOAA has developed many valuable partnerships to leverage available funding from a number of sources to maximize our resources for the benefit of the whales. For example, NMFS has made significant progress working with the Washington Department of Fish and Wildlife on oil spill response planning and reducing vessel impacts through enforcement presence on the water and education. In coordination with the Washington Department of Fish and Wildlife, the U.S. Coast Guard, and the Department of Fisheries and Oceans Canada, NOAA finalized vessel regulations to protect the whales. NMFS also developed a transboundary scientific workshop process to assess potential impacts of salmon fisheries on the whales. Orca recovery is part of the Puget Sound Partnership Action Agenda and we are coordinating with salmon recovery programs. In addition, there is an active research program including NOAA, universities, and private research organizations working to help fill in data gaps and guide recovery.

Question 9. Vessel-based research is an important component of many NOAA research programs. Research directives such as stock assessment surveys, wide scale ocean acidification, offshore critical habitat determination and global climate change research can only be completed using vessel based data collection.How much funding was requested for NOAA ship time in the President's proposed FY 2012 budget?

Answer. In the FY 2012 President's Budget Request, NOAA requested $105.3 million for ship operational costs. Of the total, $24.2 million is allocated to wage mariners salaries and augmentation costs (costs associated with additional people hired to substitute wage mariners on leave); $31.5 million is allocated for shoreside support, including training, travel, lease, guard services, contracts, administrative overhead, etc; $23.6 million is allocated to maintenance; and $26 million is allocated to variable costs mainly comprised of fuel and overtime.

Question 10. How much funding was allotted to ship time each fiscal year, since FY2000?

Answer. Please see below for funding for all NOAA ships within each FY from FY 2007–2010.

Fiscal year	OMAO Ship Cost	LO Ship Cost	Total Ship Cost	% LO funded
2007	$73M	$0M	$73M	0%
2008	$87M	$0M	$87M	0%
2009	$91M	$4M	$95M	4.2%
2010	$92M	$3M	$95M	3.2%

Information prior to FY 2007 is not available due to a different accounting system and structure.

Question 11. Which specific account does ship time come from? What percentage of ship time cost is paid by the program office? What percentage is paid by Office of Marine and Aviation Operations? Is that a consistent ratio for all NOAA ship time, or does this ratio vary between program offices?

Answer. OMAO ship time costs are expended from the Operations, Research, and Facilities Marine Services activity. Most of the funds come from Data Acquisition

and some funds come from Fleet Planning and Maintenance (FP&M) account. In FY 2010, program offices paid for 3 percent of the total ship time costs. The ratio of program time versus OMAO varies by ship and by program and by year.

Question 12. If this ratio does vary between program offices, please list program offices that utilize ship time and the specific sources of that funding.

Answer. The chart below shows a breakdown of actual FY 2010 Program Funded Days (PFD) by Line Office.

FY 2010	Program Funded Days (PFDs):	Source of Funds
NMFS	108	ESA Recovery and Research Expand Annual Stock Assessment Fisheries Research & Management Programs
OAR	37	Laboratories & Cooperative Institutes Ocean Exploration
NOS	44	Navigation Services and Charting Response & Restoration
NWS	31	Local Warnings & Forecasts

Question 13. NOAA has relocated the *McArthur II* to the Gulf of Mexico for the National Resource Damage Assessment following the Deep Horizon Oil Spill. This vessel is permanently stationed in Seattle, WA. Prior to reassignment, the *McArthur II* completed research missions primarily in the Eastern North Pacific. How long will the *McArthur II* be stationed in Gulf Waters?

Answer. NOAA Ship *McArthur II* is expected to complete its mission in support of Natural Resource Damage Assessment (NRDA) by mid-October.

Question 14. Please list all research missions and program offices which utilized the *McArthur II* from FY 2008–FY 2010. What research missions in FY 2011 and FY12 would have occurred on the *McArthur II* before the vessel was reassigned? For example, the canceled offshore Southern resident orca surveys.

NOAA Ship *McArthur*		
Fiscal Year	Mission	Line Office
FY 2008	Dolphin, Whale and Killer Whale Marine Mammal Surveys	NMFS
FY 2008	Larval Transport Studies	NMFS
FY 2008	Estuary Research	NOS
FY 2008	West Coast National Marine Sanctuary Research	NOS
FY 2008	Biotoxin Studies	NMFS
FY 2009	Dolphin, Whale and Killer Whale Marine Mammal Surveys	NMFS
FY 2009	Ice Seal Research	NMFS
FY 2009	Fishery Stock Assessments (e.g., Juvenile Salmon, Shark)	NMFS
FY 2010	Dolphin, Whale and Killer Whale Marine Mammal Surveys	NMFS
FY 2010	Ice Seal Research	NMFS
FY 2010	West Coast National Marine Sanctuary Research	NOS
Fiscal Year	Mission Cancelled Due to Reassignment	Line Office
FY 2011 & FY 2012	Dolphin and Killer Whale Marine Mammal Surveys	NMFS
FY 2011 & FY 2012	Deep Sea Coral	NOS
FY 2011 & FY 2012	West Coast National Marine Sanctuary Research	NOS

Question 15. Will NOAA be compensated for the temporary reassignment of the *McArthur II*? If so, how will this funding be used to maintain research in the North Pacific? Will this funding be used to contract a third party vessel?

Answer. OMAO is receiving full reimbursement for NOAA Ship *McArthur II* for its work in the Gulf of Mexico. The reimbursement covers all costs associated with

ship usage including personnel salaries, fuel, food, maintenance, and support services. Since *McArthur II* was planned to be inactive for FY 2011, only missions funded by NRDA are being executed.

Question 16. If research missions are transferred to other NOAA vessels, which research missions will no longer take place on those vessels? For example, will this indirectly effect ship time for other NOAA or academic collaborations which conduct research on the NOAA fleet?

Answer. There is no impact to NOAA ship time from transferring research missions from the *McArthur II* to other NOAA vessels. In the FY12 Fleet Allocation Plan (FAP), ship time, or Days at Sea (DAS), was increased on other vessels to compensate for the loss of the ship.

Question 17. Does NOAA plan to reassign the home port of the *McArthur II*?

Answer. NOAA plans to have the homeport of NOAA Ship *McArthur II* remain the Marine Operations Center—Pacific. Upon completion of its current mission in the Gulf of Mexico, *McArthur II* will return its homeport at the Marine Operations Center—Pacific, now located in Newport, Oregon.

Question 18. NOAA and academics have stated the need continue to collect orca diet and habitat use data within the Puget Sound, but also during winter when orcas are offshore and little is known. This year, ship time for Southern resident orca research was cut, eliminating offshore vessel based survey research. In addition, small vessel surveys have not been used offshore due to safety reasons in this region. Without ship time, how will NOAA collect vital survey data used to determine critical habitat of Southern resident orcas as required by the Endangered Species Act?

Answer. The NMFS Northwest Fisheries Science Center will continue to use small research vessels to conduct Southern Resident Orca Whale studies in the inside waters of Puget Sound during the portion of the year when the animals are present in inland waters. Working with the NOAA Fleet Allocation process, the program will request NOAA ship time for the winter offshore research component which is critical to monitoring the status of the stocks, and to adequately address risk factors and data gaps that require sea days.

Question 19. Which program offices and accounts funded this research in the past? Please list funding levels for at sea vessel based orca surveys over the past 5 fiscal years.

Answer. The North Pacific Southern Resident Orca Whale research program line enacted distribution (program code: 02–20–12–003) to NMFS Northwest Fisheries Science Center for the last 5 years is listed below. This includes the program's support for small boat activities in inland waters:

FY 2007—$1,091,857
FY 2008—$749,250
FY 2009—$748,864
FY 2010—$748,864
FY 2011—$742,582

OMAO provided the following support aboard the *McArthur II*:

FY 2006—19 Days-At-Sea—$150,252
FY 2007—13 Days-At-Sea—$102,804
FY 2008—10 Days-At-Sea—$90,170
FY 2009—18 Days-At-Sea—$121,896
FY 2010—0 Days-At-Sea—$0
FY 2011—0 Days-At-Sea—$0

Question 20. In the FY12 budget request, have you restored that funding? If so, please identify specifically where that funding was increased (both in the program office and OMAO).

Answer. The funding for the Southern Resident Orca Whale research program is funding from the Marine Services Operations, Research and Facilities account or funding provided by NMFS. Allocation of fleet resources in any given year is based on a prioritization process conducted by the Fleet Council.

NMFS anticipates that the FY 2011 and FY 2012 allowances will continue to be at the $750,000 level for the Southern Resident Orca Whale research program.

Question 21. Chinook catch limits in the Puget Sound were decreased due to impacts on endangered Southern resident orcas as required by the Endangered Species Act. This decision was based on data collected from Southern residents in the Puget

Sound, however peer reviewed scientific literature routinely identifies data deficiencies for winter months: when orcas are offshore. Without adequate ship time funding, how does NOAA plan to manage the Chinook salmon fishery and conserve Southern resident orcas without adequate scientific data?

Answer. The Recovery Plan for Southern Residents identifies high priority studies on the whales' coastal habitat use and diet that are needed to fill important data gaps and inform fisheries management. Under Section 7 of the ESA, NMFS has analyzed the impacts of Chinook salmon fisheries on the endangered Southern Resident killer whales both in Puget Sound and along the West Coast. Our analyses have been challenging in light of data deficiencies, particularly for winter months. NMFS has considered the limited information regarding the diet of the whales in their coastal habitat and made reasonable assumptions based on the more detailed data collected in Puget Sound. To help us address uncertainties and inform fishery management, NMFS is coordinating with Canada to develop a transboundary independent scientific review panel process to: (1) summarize the status of the available science regarding effects of prey reductions resulting from fisheries and (2) identify means for reducing data gaps and scientific uncertainties.

For salmon research, NOAA chartered a commercial vessel to provide 37 days at sea on 5 survey legs spread over the summer months of June, July and September for the 2011 field season. This charter time will be used to support forecasts on Chinook and coho stocks, and to observe the overall condition of the Northern California Current ecosystem in support of NOAA's responsibilities to support ecosystem based management goals for the agency and Pacific Fisheries Management Council. NMFS Northwest Fisheries Science Center uses small boats, including the Center's small research vessel the HAROLD W. STREETER and chartered a commercial fishing vessel to support salmon research within Puget Sound in 2011. The research programs will be participating in the NOAA Fleet Allocation process to request salmon research time on NOAA ships and will charter commercial vessels in FY 2012 for the offshore ocean conditions studies.

Question 22. At-sea observers are the most reliable source of fishery catch information, bycatch and at-sea discards, and are a central pillar of the national fishery bycatch strategy. The President's FY 2012 budget requests $39.1 million to the national fishery observer program, a cut of nearly $2 million from the enacted FY 2010 level.Approximately how many U.S. fisheries will be considered to have adequate observer coverage with this level of funding?

Answer. NMFS currently provides observer coverage in 45 fisheries nationwide, of which three fisheries include industry-funding for observers: North Pacific groundfish, West Coast trawl, and Northeast scallop. The requested level of funding for FY 2012 will provide adequate or near-adequate observer coverage for approximately 28 fisheries and pilot or baseline coverage for 17 fisheries. Approximately 70,000 days at sea are observed annually using both NOAA and industry funding, and data are used for catch and bycatch estimation, stock assessments, and to support research on biology of the species, factors that influence the bycatch rates, and economic factors that affect fishing behavior. In addition, $15.7 million for observers and monitors is requested in the FY 2012 National Catch Share Program request.

If NMFS receives the requested increase in National Catch Share Program funds, the total number of sea days observed in FY 2012 could potentially increase by approximately 10–12,000 to a total of 75,000–77,000.

Question 23. Will the 2 million dollar cut impact newly rationalized fisheries in the North Pacific, such as the West Coast Pacific Groundfish Fishery which provides 72,000 jobs on the West Coast?

Answer. No. These cuts do not affect the observers in the West Coast Pacific Groundfish Fishery Catch Share program. Congress provided $3 million above the request for FY 2010 to supplement the Hawaiian Longline Observer Program in three fisheries.

Question 24. The North Pacific Fishery Management Council and the National Marine Fisheries Service are restructuring the existing Alaska groundfish observer program in accordance with the objectives of the research plan outlined in the Magnuson-Stevens Act. This includes the establishment of a North Pacific Fishery Observer Fund based on industry fees that will be available to the Secretary for the purpose of carrying out the provisions of this section, subject to the restrictions and criteria in subsection 313(b)(2). Will NOAA's requested FY12 funding level cover the estimated $3.5 million start-up cost to get the program underway until industry fees have accumulated in sufficient amounts to pay for deployment of observers?

Answer. The North Pacific Council (Council) and industry groups in the region have been at the forefront of fisheries management, including the use of catch share programs, for a long time. The current North Pacific Observer program supports the

North Pacific and Bering Sea Groundfish, Trawl, and Fixed Gear Fishery. A restructured program will expand observer coverage, including smaller vessels in the groundfish fishery and the halibut/sablefish fishery. Under this restructured program the Council and NMFS are planning for the collection of fees to arrange contracts to support more observers and reduce conflict of interest. NOAA recognizes the value of startup funds as these fisheries transition to this restructured observer program and the importance of the restructured observer program to overall fisheries management in the region. NOAA is working closely with the Council to ensure that the funding provided supports the program until industry can pay for observer deployment.

Question 25. Scientific based management is critical to setting catch limits that allow Washington fishermen to optimize the yields in the North Pacific groundfish fisheries. Do the continuing resolutions for FY 2011 and the President's budget for 2012 provide sufficient funding to maintain these stock assessments?

Answer. The NMFS stock assessment activities conducted in the North Pacific has been able to provide adequate assessments for most important stocks on a timely basis. In Fiscal Year 2011, NMFS allocated an additional $1.3 million of Expand Annual Stock Assessment funds to assure full coverage of the North Pacific bottom trawl surveys which support most assessments in this region. With this information, NMFS is able to maintain adequate assessments for 29 out of 35 of the important North Pacific stocks and continues to work to obtain information needed to assess the other stocks. NMFS continues to work toward providing adequate assessments that are more fully linked to ecosystem considerations in order to address critical and emerging issues such as Steller sea lions and Arctic ice-dependent stocks. Nationwide, NMFS is only able to maintain 132 of 230 important stocks with adequate assessments as of the end of Fiscal Year 2010. The continuing resolution delayed implementation of some programs in FY 2011, but was resolved in time to resume critical activities this year. The President's budget for FY12 requests an additional $15 million for stock assessments and will allow NMFS to continue to close the gap in the North Pacific and elsewhere.

Question 26. What proportion of the FY 2012 President's budget fund stock assessment surveys, versus stock assessment modeling? How has this proportion changed since FY 2009 and FY 2010 enacted budgets? Will the amount of stock assessment surveys be comparable with previous years, increase or decrease? Please answer in terms of the specific fish stocks, ship time, and allotted budget for each fish stock.

Answer. NMFS does not routinely report budgets on this detailed basis because there is significant crossover between survey and modeling staff; most large-scale surveys simultaneously provide data for assessment of many stocks that live in the surveyed region; and stock assessment staff routinely work on teams that may do multiple assessments. For these reasons, NMFS believes it best not to attempt to report assessment costs per fish stock.

The proportion of the Expand Annual Stock Assessment budget that is used for surveys versus stock assessment staff varies regionally. NMFS assembled information on this topic in 2010. The greatest percentage used for surveys is in the Alaska region at 72 percent, the least is in the Pacific Islands at 20 percent, and the national average is 52 percent. Overall, the proportions have not changed much over time as NMFS has used the increases in the Expand Annual Stock Assessment budget to support and expand survey programs and to expand stock assessment modeling staff. Overall, the reasons for the large differences between regions are related to the availability of other funding, for example from Survey and Monitoring budget lines, and the availability of Days-At-Sea on NOAA vessels to conduct some of the surveys. NMFS relies on a combination of NOAA vessel Days-At-Sea and program-funded charter vessel Days-At-Sea to achieve its overall fish survey program, as described in the 1998 NOAA Fisheries Data Acquisition Plan.

In FY 2010, NMFS added two assessment scientist positions to each Regional Fisheries Science Center, except for the Southeast where a greater number were allocated. In FY 2012, NMFS plans to use the funds to create 1–2 additional assessment positions in each Regional Fisheries Science Center and to initiate planning for additional surveys, some of which will involve advanced technologies such as autonomous underwater vehicles.

Question 27. Will stock assessment surveys be directly or indirectly impacted by the *McArthur II* temporary reassignment? For example, if missions from the *McArthur II* are reassigned to other NOAA vessels which are currently completing stock assessment surveys, can you commit to keeping the level of stock assessment surveys stable?

Answer. The NOAA Ship *McArthur II* provides at sea support for a variety of ecosystem process studies that contribute to better understanding of the California Current Large Marine Ecosystem and has also been used to conduct marine mammal studies. The *McArthur II* is not configured to conduct trawling operations for fisheries surveys, and the information collected onboard MCARTHUR II is not typically used in stock assessments.

The NOAA Ships *Bell M. Shimada* and *Oscar Dyson* are operating in FY 2011 to support high priority fishery independent data collections to support stock assessments on the West Coast and Alaska in addition to the use of chartered commercial fishing vessels.

In FY 2011, NOAA chartered a commercial fishing vessel to provide scientists with 110 days at sea on the West Coast to support work that could not be accomplished on a NOAA Ship this year.

Question 28. In 2006, Congress enacted the Tsunami Warning and Education Act. I was a cosponsor of Senator Inouye's bill and I credit it with helping us improve tsunami detection and preparedness. The bill authorized $28 million in FY 2011. Can you tell me how much NOAA is requesting for activities authorized by the Act and how you will spend this funding?

Answer. NWS is requesting $23.5 million in FY 2012 for the Strengthen United States Tsunami Warning Network. The following is a breakout of how the funding will be spent:

- Deep-ocean Assessment and Reporting of Tsunami (DART) buoy Operations and Maintenance: $12.5 million
- National Tsunami Hazard Mitigation Program (NTHMP) Partner Funds (Education and Awareness programs): $4.0 million
- Tsunami Warning Center Operations (24 x 7) support: $3.0 million
- Observational Systems (seismic, sea-level monitoring): $1.3 million
- TsunamiReady™ Program and International Tsunami Information Center support (outreach, education, international engagement): $0.75 million
- Tsunami Research and Development: $2.0 million

In addition, between FY 2009 and FY 2012, the NWS Tsunami program is augmented by $49.7 million from the NTIA analog spectrum auction proceeds as specified by the Deficit Reduction Act of 2005. These funds currently support many operational, mitigation and research tsunami activities. For FY 2012, they include:

- NTHMP Partner Funds: $1.1 million
- Tsunami Warning Center Operations and upgrades: $2.75 million
- Observational Systems: $0.8 million
- TsunamiReady™ Program and International Tsunami Information Center support (outreach, education, international engagement): $1.69 million
- Tsunami Research and Development: $1.0 million
- Inundation modeling: $3.0 million

Question 29. What are the most difficult challenges that NOAA faces detecting, forecasting, and modeling tsunamis?

Answer. The most difficult challenges are presented by tsunamigenic events that occur very near coastlines. The vast majority of tsunami-related deaths and destructive inundation occur in these near source regions, where presently we have limited ability to provide accurate and timely forecasts. The first tsunami waves can reach an impacted coast in just minutes after an earthquake, or underwater landslide or volcanic eruption. When a near-shore tsunami is generated, as occurred with the recent Japan tsunami, having sufficiently dense arrays of near real-time seismic stations and sea level gauges close to shore in the high-risk tsunami-prone areas contributes to our ability to quickly get warning messages out when minutes count.

In addition to adequately detecting and forecasting near-shore events, public education continues to challenge appropriate response to tsunami events. This is especially important for communities at risk of near shore tsunamigenic events where initial waves can reach the coast within minutes. Increasing the capacity for development of high resolution inundation models and mapping, which would improve forecast accuracy, is the first step in effective education and hazard planning for at risk communities. Currently, 75 high-priority communities are planned to have these high resolution models to facilitate specific inundation forecasts, but several hundred more are needed.

Question 30. At the time of the most recent tsunami, which was generated by the 8.9 earthquake off Japan, at least 3 critical tsunami buoys off Washington State

were inoperable. At any given time, what is the percentage of tsunami buoys are inoperable?

Answer. The DART network was structured with the knowledge that a certain number of buoys would be inoperable at any given time, and that adjacent or nearby buoys would offer back-up capability. At the time of the Japan earthquake, one DART buoy off of the Washington coast was inoperable, although the critical buoys within the network closer to the earthquake source were functioning and provided invaluable data for subsequent forecasts and warnings.

The entire DART network is maintained on a yearly basis. The number of DART buoys that are inoperable at any time varies through the year. The failure rate averages about 1 DART per month, due to electronics or mooring failures, and vandalism. Our ability to maintain or repair the DARTS on a supplemental basis is contingent in part on ship time and the time of year the maintenance or repairs are needed. NOAA monitors not only the number of buoys that are inoperable, but prioritizes emergency maintenance based on the DART location. For example, we want to avoid adjacent buoys out of service at the same time. At the end of 2010, there were 6 of the 39 U.S. DART stations out of service, and 7 out of service at the time of the Japan earthquake & tsunami.

Question 31. NOAA scientists maintain that maintenance of tsunami buoys is critical to Tsunami modeling. How is reduced ship time impacting Tsunami buoy maintenance? Does the FY11 CR and the President's FY12 proposed funding level allow for improvements on buoys which are our primary tsunami warning system?

Answer. Buoys are critical to effective tsunami modeling. The DART network of 39 buoys located in their current positions is the minimal number necessary to support the modeling requirement and ensuring redundancy for fail safe operations. Due to the fact that these systems are not 100 percent reliable, there will be some number out at any given time.

Since the DART network was completed in FY 2008, the National Data Buoy Center has been steadily improving system performance by introducing engineering upgrades to the system as part of its normal maintenance practice. This has been successful in reducing operations and maintenance costs while improving system reliability and availability. Funding constraints under the FY 2011 Continuing Resolution affected the ability of NWS to procure ship time for DART buoy repairs. The FY 2012 President's Budget will provide funding to continue improved systems performance.

Question 32. Ocean acidification and warming are threatening our living marine resources and the people that rely on them for their livelihood. The Puget Sound is disproportionately impacted by ocean acidification. Shellfish growers in the Sound are struggling to find support to help them adapt to climate change and ocean acidification impacts. How would NOAA's budget help communities, ecosystems, and industries respond to ocean acidification?

Answer. NOAA leads the national effort to understand the impact of ocean acidification on the Earth's environment and to conserve and manage the impacted marine organisms and ecosystems in U.S. marine and Great Lakes waters. This research is conducted across the agency, but primarily within the Office of Oceanic and Atmospheric Research (OAR).

NOAA currently conducts ocean acidification research in three main areas, coordinated through the Ocean Acidification Program Office, within OAR. These areas include: (1) field monitoring of ocean carbon chemistry and selected marine species, (2) species response experiments, and (3) ecosystem modeling. The research can help inform managers and stakeholders, which in turn will help communities, ecosystems, and industries respond to ocean acidification.

One example of the value of ocean acidification research is evident in the Pacific Northwest oyster aquaculture industry. Beginning in 2005, production at some Pacific Northwest oyster hatcheries began declining at an alarming rate, posing severe economic impacts and challenging a way of life held by shellfish growers for over 130 years. Oyster production represents 76 percent of the West Coast shellfish industry, which supports more than 3,000 jobs. A 2010 $500,000 federal stimulus investment in monitoring coastal seawater enabled hatchery managers to schedule production when water quality is good. This change is helping to restore commercial hatcheries and is expected to reap an estimated $35 million[2] for coastal communities in Oregon and Washington.

NOAA's FY 2012 budget request includes funds to continue and expand experiments on the effects of acidified water on vulnerable ecologically and commercially

[2] Sustainable Fisheries Partnership from data provided by the Pacific Coast Shellfish Growers Association, 2009.

important species. Funds have also been requested for additional field surveys of vulnerable species like shellfish, and deployments of new moorings to monitor shifts in ocean chemistry. These results will directly inform industry and resource managers around the country. Funds will also be used to complete work on specialized lab facilities necessary for this type of work, establish carbon parameter analytical capabilities to ensure consistent sampling and measuring methods, and for the development of advanced ocean acidification technologies and sensors. Because many of the effects of ocean acidification on living marine resources will be through changes in food webs, funding is also proposed for the development of new ecosystem models to help understand the indirect effects of changing ocean chemistry. Finally, the FY 2012 budget request includes funds to establish a coral reef monitoring network to investigate the ecological and socioeconomic consequences of ocean acidification in these vulnerable ecosystems.

The current NOAA budget has shown tremendous results at a regional level. Research activities described in the NOAA Ocean and Great Lakes Acidification Research Plan and included in NOAA's FY 2012 budget request will greatly enhance understanding of ocean acidification. Advances in ocean acidification research will inform national and international mitigation and adaptation decision-making to best conserve marine ecosystems and sustain the critical services that ocean, coastal, and Great Lakes ecosystems provide to the national economy.

Question 33. How is NOAA engaging fishermen and other stakeholders in developing ocean acidification monitoring and research plan to make sure the research conducted is relevant to them? How do you plan to involve marine resource managers and users in research activities?

Answer. NOAA is actively engaging fishermen and other stakeholders in developing ocean acidification monitoring and research plans and in implementing these plans. Scientists at NOAA's Pacific Marine Environmental Laboratory (PMEL) have been engaging fishermen and stakeholders on the best sampling locations for our surveys and potential locations for our moorings. An active partnership between PMEL chemists, shellfish industry professionals, and academic colleagues in the region has generated new insights into the magnitude and seasonal patterns of ocean acidification in Puget Sound and along the Washington and Oregon coasts. This research has shown that our coastal ecosystems are currently exposed to some of the most acidified waters observed in marine environments anywhere to date, due to the convergence of human and natural processes that can exacerbate the effects of ocean acidification in these habitats. PMEL scientists are in continuous discussions with stakeholders to ensure that products developed from our research are relevant to the needs of the shellfish industry and natural resource managers.

Researchers at the National Marine Fisheries Service Northwest Fisheries Science Center in Seattle, WA are currently working with Taylor Shellfish Farms on ocean acidification experiments involving the growth of Pacific oysters, Olympia oysters, geoducks and other shellfish in high-CO_2 environments. The hatchery is providing the animals used for the studies and is helping guide the questions addressed by the research. In another example of interactions with stakeholders, researchers at the Northwest Fisheries Science Center are working on a joint research project with biologists from the Suquamish tribe in Washington State to understand the impact of ocean acidification on Dungeness crab, a major fishery for the tribe and others on the West Coast. Similar sorts of collaborative interactions are happening between stakeholders and NOAA researchers at all of the regional Fisheries Science centers, and they are focused on local species and the needs of local communities.

NOAA scientists and managers have also been involved in numerous outreach activities around ocean acidification. These range from presentations to regional Fisheries Management Councils, to participating in shellfish industry national meetings and workshops on acidification, to displays at museums and primary school curriculum development. Last year, NOAA scientists helped found the California Current Acidification Network, a group representing Federal and state science agencies, NGO's, and the West Coast shellfish industry (*http://c-can.msi.ucsb.edu/*). This effort grew out of concern for the future of shellfish on the West Coast. NOAA also helped fund the Ocean Acidification Impacts on Shellfish Workshop in July 2010 that brought together West Coast stakeholders, including scientists, shellfish growers, fishermen, and environmental managers, to stimulate collaborations among these sectors. The final report, which includes the findings and recommendations from the workshop, is available here: *http://www.sccwrp.org/Meetings/Workshops/OceanAcidificationWorkshop.aspx*.

Question 34. Would NOAA's proposed Climate Service provide a way for the Federal Government to help industries like Washington's shellfish farmers deal with the impacts of climate change and ocean acidification?

Answer. NOAA's climate science and information helps federal, tribal, state, and local fisheries resource managers prepare for, and respond to, the impacts of climate on large marine ecosystems through improved understanding of how changes in climate can alter ocean circulation and composition, and how such changes in ocean properties impact living marine resources.

The proposed Climate Service Line Office would function to better integrate and coordinate NOAA's existing core capabilities in observations and data stewardship, understanding and modeling, predictions and projections, and service development. This information would help industries such as Washington's shellfish farmers make informed decisions based on climatic trends, and the industry's specific requirements, on when, where, and what to be aware of, regarding the impacts of climate.

Though ocean acidification research would not be part of the proposed Climate Service directly, NOAA's Ocean Acidification Program Office, within the Office of Oceanic and Atmospheric Research (OAR), will continue to conduct this type of research and develop ecological models and forecast tools to help industries respond to and adapt to the consequences of ocean acidification. NOAA envisions close coordination and collaboration between the Ocean Acidification Program and the proposed Climate Service as many products that would flow from the proposed new Line Office, such as long-term sea surface temperature, wind, and sea surface height, would be critical to forecasting coastal ocean acidification conditions.

Question 35. If the Climate Service is cut, how do you will you continue to address ocean acidification and it's impacts on both wildlife and local economies?

Answer. NOAA has recently established a formal Ocean Acidification Program Office within the Office of Oceanic and Atmospheric Research (OAR) as mandated by Congress in the FOARAM Act. At this time, most of NOAA's ocean acidification resources are focused on the research needed to develop forecasting tools for predicting the future chemistry of the ocean and its impacts on marine organisms. The program currently resides within OAR and is not proposed to be included in the Climate Service. NOAA ocean acidification research is currently underway or is planned within OAR, National Marine Fisheries Service, National Ocean Service, and National Environmental Satellite, Data and Information Service.

NOAA's current major ocean acidification activities include:

- establishment and maintenance of an ocean acidification monitoring network;
- hydrographic cruises on the U.S. east and west coasts and the Gulf of Mexico;
- studies on commercially and ecologically important marine organisms to determine species-specific effects of ocean acidification;
- development of ecological models and forecast tools for predicting, responding and adapting to the consequences of ocean acidification;
- synthesis of data and information on ocean acidification;
- leading the Subcommittee on Ocean Science and Technology (SOST) Interagency Working Group on Ocean Acidification; and,
- participation in the international IMBER (Integrated Marine Biogeochemistry and Ecosystem Research) and SOLAS (Surface Ocean Lower Atmosphere Study) Ocean Acidification Working Group.

If the proposed Climate Service is not approved by Congress, NOAA will continue to study ocean acidification and its impacts on marine resources and local communities. Should NOAA's Climate Service proposal be approved, however, NOAA's climate capabilities would be better organized to more efficiently and effectively deliver climate science products, such long-term sea surface temperature, wind, and sea surface height data that would help to advance forecasting of coastal ocean acidification conditions and in turn assist stakeholders in responding and adapting to the consequences of ocean acidification.

Question 36. How long can NOAA wait to launch JPSS before our weather modeling systems begin to suffer?

Answer. Any gap in polar coverage will degrade our weather models. Due to the funding shortfall and instability for JPSS, the launch date for JPSS–1 has already slipped and we are now in jeopardy of not having JPSS–1 on-orbit when the NPOESS Preparatory Project (NPP) reaches end of life. A gap in NOAA polar satellite coverage in the afternoon orbit would result in a degradation of the forecast accuracy at 3 days and longer. For example, the higher confidence forecasts currently achieved at 7 days would be achievable only out to 5 days. This degradation would cause NWS to suffer a loss of decade's worth of continual improvements in forecast ability.

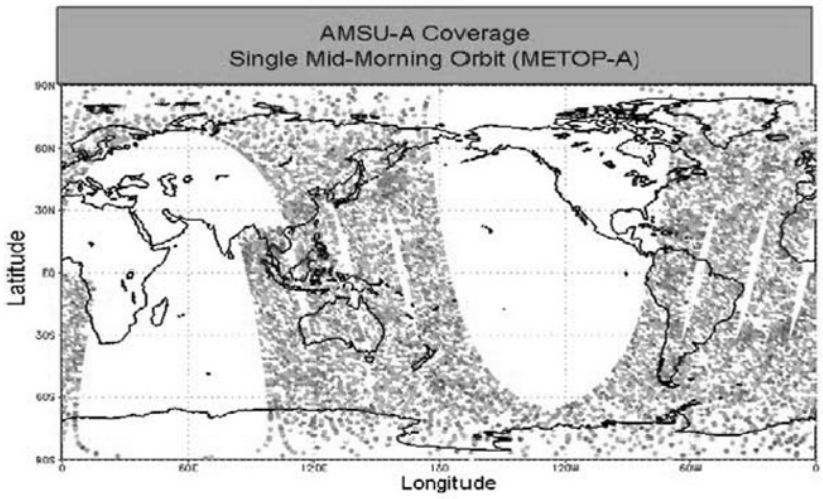
Question 37. Will the geostationary satellite system (GOES–R) maintain weather prediction at or near current levels during the gap in JPSS coverage? If not, how will coverage now be different during the gap including GOES–R in your analysis?

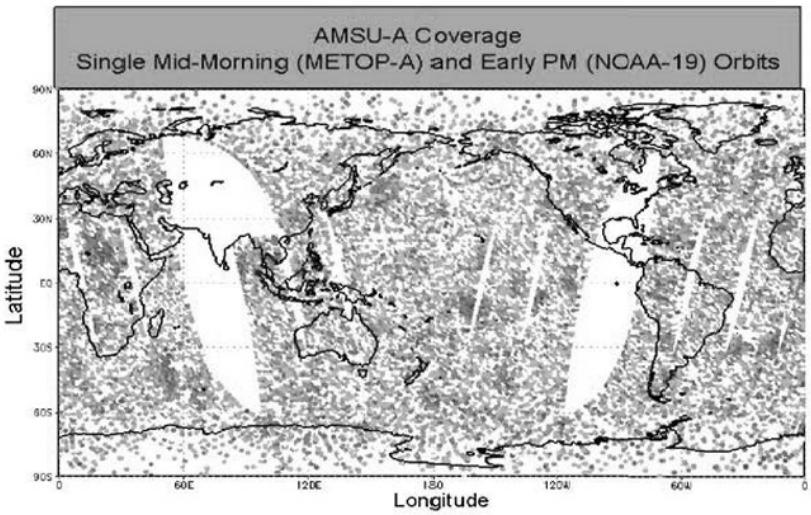
Answer. While some GOES data is assimilated into forecast models, the primary purpose of the GOES system is to provide cloud and moisture imagery for real time detection of weather events. These satellites are not currently designed to provide the detailed vertical profile of temperature and moisture data crucial to weather models. In the afternoon orbit, the primary role of the operational polar satellite sounders on NOAA spacecraft is to provide the detailed data for input into National Centers for Environmental Prediction (NCEP) weather models. NPP and JPSS sounders will provide these critical data in the afternoon orbit once they are operational. The EUMETSAT Metop satellites provide and will continue to provide these observations in the mid-morning orbit.

As such, the GOES–R satellite will offer little to no mitigation to the loss of detailed vertical temperature and moisture data that the JPSS system is expected to provide.

Question 38. Can you produce a figure showing where these gaps in coverage will occur offshore in the Gulf of Alaska and the greater North Pacific? How will the gaps in coverage impact fishermen and the marine shipping industry? Please answer in terms of safety and economic impacts.

Answer. From a weather modeling perspective, the operational polar satellites provide critical vertical temperature and moisture data for NOAA's global forecast, especially for the data-sparse regions such as the Gulf of Alaska and the Northern Pacific. Models are run 4 times per day at 0000, 0600, 1200, and 1800 GMT (Greenwich Mean Time). Since the sounding data is perishable, only a limited time window around each of these model run times is usable. The upper panel of the figure below shows the usable data for the morning model run using only the mid-morning Metop-A satellite sounder. The lower panel of the figure shows the increased data coverage available when the afternoon satellite data is added to the mid-morning Metop-A where the colored dots represent data acquired by the satellites while the blank (white) areas represent areas where no data is acquired.





Note this pattern is retained but shifted spatially during the other three model runs. Polar sounding data is especially critical in the Gulf of Alaska and the Northern Pacific where satellite soundings represent virtually the only type of vertical temperature and moisture data available.

The Alaska fishing industry consistently leads all states in volume with fish landings;[3] providing the fishery industry with accurate weather forecasts to support safety at sea remains a priority for NOAA.

Since Alaska does not benefit from receiving data from geostationary satellites due to its latitude, polar-orbiting data becomes an increasingly important source of space-based data for weather forecasting in Alaska. In addition to the loss of sounding data to the models, the loss of polar-orbiting imagery data has critical operational impacts. For example, the loss of imagery would limit the ability of weather forecasters to monitor, detect, and track weather features that affect Alaska. This is especially true over the data-sparse oceans that surround Alaska on three sides.

Such a loss could degrade forecasting the timing and accuracy of high-impact maritime weather events and endanger lives and property. Polar-orbiting imagery from NOAA satellites is also used to detect and produce volcanic ash products for aviation interests. This imagery is a mission-critical tool for Alaskan forecasters to detect and track airborne volcanic ash, providing forecasts that have a direct impact on flight safety and help minimize unnecessary disruption to the aviation industry. This imagery is also used to support sea ice forecasts that are critical to indigenous natives traveling on sea ice on hunting and fishing trips necessary to sustain families and villages during winter months.

Improvements in weather forecasting and warnings directly translate into benefits for maritime commerce, fishing, oil exploration and extraction, search and rescue, and hazardous spill mitigation. More than 95 percent of U.S. international trade by volume is transported by ship. The $200 billion global marine shipping industry is increasingly relying on accurate marine warnings and forecasts to keep ships on schedule and safe from dangerous ocean storms (Kite-Powell 2000). These maritime and fishing concerns are readily understood in Alaska.

Question 39. At the NOAA budget hearing, you mentioned that rescue beacons would become ineffective if there is a gap in satellite coverage. What is NOAA doing to compensate for the impending safety risk to my constituents in the fishing, maritime shipping and recreational maritime industries? Are you working with the Coast Guard to implement new measures to locate, rescue and protect lives at sea? If so, what do you plan to do to maintain or increase safety at sea?

Answer. NOAA is working to preserve the capabilities of the Search and Rescue Satellite system (SARSAT) in the Joint Polar Satellite System (JPSS) program.

[3] Fisheries of the United States—2009 [*http://www.st.nmfs.noaa.gov/st1/fus/fus09/index.html*].

Since the JPSS–1 spacecraft bus will not be able to accommodate the SARSAT payload, NOAA is exploring several options to ensure that satellite-enabled SARSAT coverage is maintained. NOAA will utilize the current in-orbit satellites for as long as they continue to operate. NOAA is also working with European and Canadian partners to possibly manifest a SARSAT instrument on the Metop-C satellite which is currently scheduled for launch in 2016. Other possibilities being evaluated include a SARSAT-only dedicated satellite or placing an instrument on a commercial satellite. NOAA is working with the Russian Federation to reaffirm their commitment to their portion of the COSPAS–SARSAT system since the complete SARSAT system requires both Russian and U.S. satellite support.

Question 40 NOAA's Pacific Northwest B–WET was highlighted by the President in his State of the Union address. BWET received continuous earmark funding to provide environmental activities to support STEM education and watershed education programs in Oregon and Washington. The vast majority of B-WET funding was redistributed locally through jobs, supplies, student activities, and has direct economic impacts in the communities it serves. If this program is not absorbed by NOAA's education mission, an estimated 6,000 students and 400 teachers and community leaders will not be reached in Washington and Oregon. In the FY 2012 Presidential budget request, BWET received no funding. Does NOAA plan to fund BWET in FY 2012? If so, which program office will fund the program, and how much funding will the program receive?

Answer. NOAA's education programs and networks focus on areas where investments in science and management can best be leveraged in order to have the broadest impact with the resources available. While NOAA is not specifically requesting funds for B–WET, the FY 2012 President's Budget request provides $5.0 million for the broader Competitive Education Grants Program, for which qualified education programs are eligible to apply.

Question 41. The Environmental Protection Agency (EPA) is conducting a scientific assessment of the Bristol Bay watershed to evaluate how large-scale development projects may affect water quality and Bristol Bay's salmon fishery. NOAA scientists conduct stock assessments and other scientific research on multiple commercially valuable stocks in this region such as king crab, Pollock, and cod among others. Is NOAA working with the EPA to assess the potential impact that a large-scale hard rock mine could have on Bristol Bay and the Eastern Bering Sea?

Answer. Yes. The U.S. Environmental Protection Agency (EPA) has requested that NMFS provide assistance with EPA's Bristol Bay watershed assessment. NMFS's primary contributions will be to address the range and distribution of Bristol Bay salmon; the hydro-geomorphic processes that support spawning and rearing habitat for salmon; the contribution of salmon to the diets of fish and marine mammals in Bristol Bay and the eastern Bering Sea; and the ecological links between the watershed, estuary, nearshore, and offshore ecosystems. NMFS will draft the marine section of the watershed assessment and contribute to the freshwater section.

Question 42. Is NOAA sharing data with the EPA for the purpose of the Bristol Bay assessment? If so, which data sets has NOAA contributed to this project?

Answer. NOAA has not yet contributed any data sets to this assessment. We have begun examining pertinent data to see what we may be able to provide, such as data regarding the contributions of Bristol Bay salmon to the diets of commercially valuable marine species in the eastern Bering Sea and to marine mammals.

Question 43. Are there additional NOAA datasets or stocks that you would like EPA to consider when developing their experimental design and environmental impact analysis? If so, which data, species or areas would NOAA like considered?

Answer. Until NOAA sees the annotated outline for EPA's proposed assessment, we are unable to identify any gaps. EPA has requested that our review of the annotated outline highlight any additional material EPA should consider, so we intend to provide that feedback to EPA.

Question 44. Will NOAA scientists contributed flow, current and wind models to the EPA assessment? Specifically, have NOAA scientists contributed to models that would estimate how leaked pollutants used in mining could flow into productive fishing grounds in Bristol Bay and throughout the Bering Sea? Why or why not? If there has been collaboration between NOAA and EPA, is there cost sharing for this analysis/modeling?

Answer. At this point NOAA anticipates providing data on the contribution of salmon to the diets of marine fish in the eastern Bering Sea; input regarding potential effects of large-scale hard rock mining on hydrology and water quality that would be of concern for salmon production; information regarding the effects of copper and other contaminants (*e.g.,* ore processing chemicals) on salmon; data on ma-

rine mammal use of Bristol Bay (belugas, fur seals, etc.) and reliance on salmon; trends in abundance of Bristol Bay marine mammal species that feed on salmon; and possibly some socioeconomic information about the role of salmon in supporting the subsistence culture and lifestyle in Native Alaskan communities from regulatory impact reviews conducted in western Alaska. NOAA has not yet discussed with EPA whether flow, current, or wind models would be useful for the analysis. NOAA also has not discussed cost sharing with EPA.

Question 45. NOAA oversees management and conservation species under ESA and/or MMPA protection in Bristol Bay and other regional ecosystems. These species include, but are not limited to, the Steller's eider, spectacled eider, shearwaters, multiple highly migratory albatross species, beluga whales, harbor seals, ice seals, transient orcas, Steller sea lions, and northern fur seals. Are NOAA biologists sharing data collected on these species with EPA for the Bristol Bay large scale mine environmental impact assessment? If so, which data and which species' data sets are shared?

Answer. NOAA does not have jurisdiction over seabirds protected via the Endangered Species Act. Those species are under the jurisdiction of the U.S. Fish and Wildlife Service. NMFS will provide data to EPA regarding marine mammal usage of Bristol Bay, including available data regarding food web connections.

Question 46. How much funding goes into NOAA protected Species research off Alaskan waters? How has this funding changed over the last five fiscal years? How does these recent funding levels compare to the FY 2012 request?

Answer. Set forth below is information on what is spent on marine mammal research in Alaska waters, which represents the majority of the expenditures by NOAA on protected species research in Alaskan waters.

2007: $3.33 million

2008: $9.50 million

2009: $9.26 million

2010: $15.40 million (includes $5 million in reimbursable support from the U.S. Department of the Interior's Bureau of Ocean Energy Management, Regulation & Enforcement)

2011: $15.63 million (includes $5 million in reimbursable support from U.S. Department of the Interior's Bureau of Ocean Energy Management, Regulation & Enforcement)

2012 request: $11.88 million

There are 45 stocks of marine mammals under NMFS stewardship in the Exclusive Economic Zone waters off Alaska, distributed throughout 3.8 million km2 (1.5 million miles2) of ocean, and along 44,500 miles of coastline. NMFS Alaska Fisheries Science Center conducts surveys and other studies critical for support of stock assessments for 37 of these 45 stocks, including all 19 stocks of seals, fur seals, and sea lions, and 18 of the 26 stocks of whales, dolphins, and porpoises.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. MARK BEGICH TO DR. JANE LUBCHENCO

Question 1. JPSS funding in 2011 unfortunately didn't make it into the CR. What is NOAA's "Plan B" to cover the data gap? Will NOAA be buying data from foreign nations? If so, which ones?

Answer. NOAA has traditionally flown its polar-orbiting satellite in the afternoon orbit, and provided that data to the Department of Defense (DOD) and to the Europeans, who maintain other compatible satellites in complementary orbits. There are no currently deployed alternatives which will cover the data gap in the afternoon orbit that will occur due to the delayed launch of the first Joint Polar Satellite System (JPSS) satellite. Should any nation field an appropriate satellite in the afternoon orbit, NOAA would assess the quality and cost of using its data and leverage as much useful data as possible.

There are potential commercial solutions being proposed, in the form of data buys or hosted payloads. These solutions propose to mitigate the JPSS gap in part and preserve some critical data feeds necessary for continuity of weather forecasting and climate records. NOAA is evaluating these options for technical merit, risk, and cost.

Question 2. If we do buy data, will those satellites also pick up signals from emergency beacons?

Answer. Currently, NOAA POES and EUMETSAT Metop-A are the only polar-orbiting satellites that carry the SARSAT instruments. There is no foreign entity flying SARSAT capabilities in the polar orbit from which to purchase this data.

Question 3. What activities will NOAA be able to keep going with the limited JPSS funding that was provided?

Answer. With the limited funding, and due to the fact that NOAA plans to use the NPP data operationally, NOAA has focused its efforts on preparing for the NPP launch, specifically, fielding and testing of the ground segment. Due to the current budget constraints, NOAA has significantly reduced efforts on JPSS–1 spacecraft and instrument development, which has resulted in a slip in the launch of JPSS–1 beyond launch dates originally planned in the February 1, 2010 announcement by the Administration to stand up the JPSS program.

Question 4. Will the additional funds NOAA requested in 2012 be sufficient to get the JPSS program back on track, given the increased costs related to canceling contracts in 2011?

Answer. The program has been impacted by the FY 2011 appropriations, and as a result the original launch readiness date for JPSS–1 has already slipped and cannot be recovered. Receiving the funding requested in President's budget for FY 2012 will prevent further delays in the launch of JPSS–1. More delays will further jeopardize the availability of satellite data that informs NOAA's weather forecasts. The JPSS program has managed to minimally fund existing contracts in order to allow for rapid resumption of work toward JPSS–1.

Question 5. In other words, if the 2012 request is the same as the 2011 request, and we anticipate greater costs due to a lack of 2011 funding, will the 2012 request cover all the capabilities the 2011 request would have or will some capabilities have to be removed?

Answer. The JPSS Program required $1.060 billion in FY 2011 to implement the program envisioned by the Administration's February 2010 decision to restructure the NPOESS program. The FY 2011 Continuing Resolution (PL 112–10) did not approve the needed increase over FY 2010 enacted levels for the JPSS program. This resulted in a necessity to delay the launch of the first JPSS satellite to the first quarter of FY 2017.

The President's FY 2012 Budget request of $1.070 billion for JPSS and an additional $30.4 million for the NOAA Climate Sensor program attempts to retain the scope of the program (*i.e.,* retain the same suite of instruments). However, this alone will not allow recovery of the launch date slippage.

If the JPSS Program is funded at $1.070 billion in FY 2012, NOAA will retain the current suite of instruments as announced in the February 2010 decision, but the JPSS program would still be expected to launch in the first quarter of FY 2017.

Question 6. Please provide more details on how the $15M for stock assessment improvements will be used, if made available. Will the funds go to cooperative research efforts, more days for NOAA research ships, more funding for NMFS personnel? How will NOAA decide which fisheries need improved assessments? Have any already been identified?

Answer. In the FY 2012 President's Request, NMFS is requesting $67.1 million to expand annual stock assessments, an increase of $15 million. These funds will be used to support stock assessment scientists, charter vessels to conduct fishery-independent surveys not supported by the NOAA fleet, and conduct biological studies, all to improve assessments for high priority stocks, especially stocks that currently have an overfishing status; increase the frequency of assessments being conducted in support of fishery management using Annual Catch Limits; and expand our assessment capabilities to include data poor stocks, 3–5 years from now. None of the $15 million will be dedicated to cooperative research efforts as these are funded out of separate budget lines. However, NMFS proposes to improve fishery-independent surveys using advanced sampling technologies, including near real-time processing of survey data as it is collected at sea and more rapid delivery of these data to shore-based analysts.

NMFS tracks closely the quality and timeliness of assessments being conducted today across the country. This information is made publicly available through our Species Information System public portal (*https://www.st.nmfs.noaa.gov/sisPortal/sisPortalMain.jsp*), and from our Regional Science Centers in more detail. Within each region, NMFS works closely with the respective Regional Fishery Management Councils to determine which stocks need updated assessments and which currently un-assessed stocks need to be targets for new monitoring and assessment. NMFS is currently working to align and standardize these prioritization efforts to help assure that the highest national priorities are being addressed.

Question 7. What progress has been made toward implementing the recommendations of the Inspector General's report on Fishery Law Enforcement and specifically the concerns over potentially excessive fishery penalties?

Answer. NOAA has taken a number of actions in response to the series of Office of Inspector General (IG) reports beginning in February 2010. A summary of these actions is below. With respect to the IG's concerns regarding potentially excessive penalties, after the IG issued the first report, NOAA immediately began requiring the NOAA General Counsel or Deputy General Counsel to approve all charging and settlement decisions. To date, the NOAA General Counsel and Deputy General Counsel have reviewed almost 400 proposed charging and settlement decisions. Additionally, NOAA developed and recently implemented a new nationwide penalty policy that ensures penalties are consistently assessed throughout the country.

NOAA Enforcement Program Improvements

June 2009

- June 2—Hearing concerns about NOAA's law enforcement program from members of the fishing community and Congress, Under Secretary of Commerce for Oceans and Atmosphere, Dr. Jane Lubchenco requested the Inspector General review of NOAA enforcement activities.

January 2010

- January 21—DOC's Inspector General issued a report entitled "Review of NOAA Fisheries Enforcement Program and Operations.

February 2010

- February 3—NOAA announces steps to improve fisheries law enforcement in response to Inspector General Report, *Review of NOAA Fisheries Enforcement Programs and Operations*.
  - Under Secretary Lubchenco asked NOAA's General Counsel to lead a high level review of existing policies and procedures, and recommend ways to increase coordination and consistency, transparency, accountability, and fairness nationwide in agency law enforcement efforts.
  - Under Secretary Lubchenco issued directive freezing immediately the hiring of criminal investigators pending an internal workforce analysis.
  - Under Secretary Lubchenco issued a directive immediately transferring oversight of the Asset Forfeiture Fund from NMFS to NOAA's Comptroller.
  - Under Secretary Lubchenco issued a directive immediately instituting higher level review of all proposed charging decisions and settlements.
  - Under Secretary Lubchenco announced that NOAA will convene a national summit on enforcement policies and practices in order to hear from constituents and experts in the field.
  - The IG's report noted that NOAA's General Counsel for Enforcement and Litigation made improvements to policies and procedures to increase coordination and consistency in law enforcement efforts, calling them a "good start to building transparency." These steps included:
    - Revising procedural regulations and the penalty schedule;
    - Developing an internal operations and procedural manual;
    - Establishing a new case tracking database that links enforcement and legal case management systems;
    - Increasing communications with the Fishery Management Councils, especially in the Northeast U.S.;
    - Providing explanatory notes to case files;
    - Tracking priorities; and,
    - Providing public access to information on charges brought and cases concluded.
- February 5—NOAA issued requirement that the NOAA Comptroller approve expenditures of $1,000 or more from the Asset Forfeiture Fund.

March 2010

- March 18—NOAA submitted detailed plan of action in response to IG's January 2010 report.

April 2010

- April 8—NMFS appointed Alan Risenhoover as new Acting Director for the NOAA Office of Law Enforcement.
- April 8—NOAA issued an agency -wide notice on records retention and began targeted training with NMFS on records retention.

May 2010

- May 3—NOAA Office of General Counsel appointed Charles Green as new Acting Assistant General Counsel for Enforcement and Litigation.

June 2010

- June 23—NOAA Office of General Counsel issued final rule requiring NOAA to justify proposed penalties/sanctions in hearings before administrative law judges.

July 2010

- July 1—Inspector General issued *Review of National Marine Fisheries Service (NMFS) Asset Forfeiture Fund*.
- July 7—First combined Office of Law Enforcement/General Counsel Office for Enforcement and Litigation monthly enforcement report covers actions taken in June. Report used to facilitate oversight of NOAA's enforcement program, assessment of the program's efficacy, and informed decision-making with respect to regional and national enforcement priorities.
- July 29—NOAA issued detailed corrective action plan in response to Inspector General's report regarding the Asset Forfeiture Fund.

August 2010

- August 1—Posted biannual report on enforcement charging decisions and settlements covering period March to July 2010.
- August 3—Held National Enforcement Summit in Washington, D.C. to seek ideas from a range of stakeholders on improving NOAA's enforcement program.
- August 3—Published for comment proposed protocol for establishing national and regional enforcement priorities.
- Completed a review and confirmation of the $8.7 million Asset Forfeiture Fund balance as of March 31, 2010 by independent certified public accounting firm.
- Reduced the number of NOAA Enforcement and General Counsel staff with government purchase card authority by 32 percent.

September 2010

- September 13—NMFS appointed Tim Donovan as new Acting Special Agent in Charge for Northeast enforcement office.
- September 16—NOAA Office of General Counsel appointed Benjamin Friedman as the new, permanent NOAA Assistant General Counsel for Enforcement & Litigation.
- September 23—In response to the release of the Inspector General's *Final Report—Review of NOAA Fisheries Enforcement Programs and Operations*, Secretary Locke and Under Secretary Lubchenco took a series of actions to strengthen the public's trust in NOAA's law enforcement program.
  - Appointed Special Master to Review NOAA Law Enforcement Cases;
  - Implemented new policy limiting use of the Asset Forfeiture Fund, and sought public comment on the new policy;
  - Issued final protocol for establishing national and regional enforcement priorities, and sought public comment;
  - Posted on the NOAA web page enforcement charging decisions and settlements from March to July 2010;
  - Established e-hotline for enforcement related complaints.

October 2010

- October 18—Published proposed nationwide penalty policy for comment.
- October 19—Posted nationwide job announcement for new Director, NOAA Office of Law Enforcement.

November 2010

- November 29—Announced a compliance assistance pilot program in the Northeast, which included a new compliance liaison position, a new outreach specialist, and eight new enforcement officers.

December 2010

- December 31—Issued Practice Manual for NOAA General Counsel Office for Enforcement and Litigation, to include guidance on case evaluation, administrative hearings, and case management.

January 2011

- January 4—Issued new vehicle policy for NOAA Office of Law Enforcement that reduces the number of vehicles within the Office of Law Enforcement by 30 and ensures the number of vehicles is appropriate for needed enforcement activities.

February 2011

- February 1—Posted biannual report on enforcement charging decisions and settlements covering period August to December 2010.
- Included the Asset Forfeiture Fund in NOAA's annual budget submission as well as NMFS and General Counsel Office for Enforcement and Litigation annual operating plans.
- Initiated an audit of the Asset Forfeiture Fund for the period ending March 31, 2011 by an independent audit firm which is scheduled for completion in June 2011. The independent audit firm will also review a retrospective sample of transactions from Fiscal Years 2005 to 2010.

March 2011

- March 16—Secretary Locke announced additional reforms to the NOAA's Law Enforcement Program:
- Fishermen and businesses can request Special Master review of enforcement cases through May 6, 2011;
- Issued final policy limiting use of Asset Forfeiture Fund;
- Issued final nationwide Penalty Policy; and,
- Committed to working with Regional Fishery Management Councils, fishermen and stakeholders to streamline and simplify fishing regulations.

April 2011

- April 4—Brought online new enforcement database for NOAA Office of the General Counsel.
- April 4—Reposted nationwide job announcement for new Director, NOAA Office of Law Enforcement.
- April 14—Named compliance assistance liaison to continue outreach to industry in Northeast.
- April 26—Released phase one of an independent assessment of the fishery management system in New England, requested by the New England Fishery Management Council and NOAA Assistant Administrator for Fisheries Eric Schwaab.

May 2011

- May 17—Secretary Locke announces NOAA will remit funds to 11 Claimants in response to the Special Master's recommendations.

June 2011

- June 16—NOAA releases report from the accounting firm Clifton Gunderson, LLP, which conducted an independent audit of NOAA's Asset Forfeiture Fund and the Fund's audited financial statements. NOAA received an unqualified (clean) opinion, or the best type of audit opinion one can receive.

July 2011

- July 25—NOAA announces appointment of Bruce Buckson as the new, permanent Director for the NOAA Office of Law Enforcement.

Ongoing

- Working with the U.S. Coast Guard and Office of Personnel Management to transition from the current use of Coast Guard administrative law judges to another system based on concerns raised in the Special Master's Report.

- Developing updates and revisions to the NOAA Office of Law Enforcement (OLE) Operations Manual.
- Completing process for identifying draft enforcement priorities.
- Upgrading the enforcement database for NOAA OLE.
- Requiring all enforcement personnel and enforcement attorneys to attend annual professional and ethics training to ensure they follow fair, effective and professional procedures.
- Expanding the compliance liaison program nationwide to assist fishermen at the waterfront to better understand and have stronger incentives to comply with regulations.
- Finalizing a workforce review to more appropriately balance the number of enforcement officers and special agents.
- Working with all the Regional Fishery Management Councils (Councils) to simplify fishery management regulations, including: instruction on regulatory reform/review as part of its annual, new Council Member Training and as part of training modules for agency staff;
- Continue working with the Councils' enforcement and compliance committees to look at the issues of regulatory complexity and burdens.
- Conducting routine training for the fishing industry and other stakeholders as needed on regulatory compliance in each region at least once per year, to be conducted by staff from the NMFS' Office of Sustainable Fisheries in conjunction with the OLE, the General Counsel Office of Enforcement and Litigation, the Councils, and others as appropriate.
- Working with the Councils and the NOAA Office of the Chief Information Officer to explore how to improve web-based delivery of information on fishery management regulations.

Question 8. The Pacific Salmon Treaty line items was recommended by the U.S. section of the Pacific Salmon commission to be funded at $9.8M, yet NOAA only asked for $5.7M. This is the level they have been funded at since 1992. Is this amount sufficient for the U.S. to meet its international treaty obligations?

Answer. The FY 2012 President's Request includes $5.7 million for the base programs necessary to continue implementation of the Pacific Salmon Treaty and $3.0 million to implement specific provisions of the 2008 Chinook agreement of which $1.5 million is for the Puget Sound Critical Stocks program and $1.5 million is for improvements to the Coded Wire Tagging Program. Funding for base programs supports research projects conducted by NMFS and the States of Alaska, Washington, Oregon and Idaho including personnel support to the Pacific Salmon Commission's panels and technical committees to conduct a broad range of salmon stock assessment and fishery monitoring programs to implement provisions of the Pacific Salmon Treaty.

The $8.7 million requested will satisfy the mandates agreed to with Canada.

Question 9. NOAA's regulatory actions have significant economic impacts. The Steller Sea lion biop closed a $30 million fishery in the western Aleutians. The assessment of potential impacts of critical habitat declared for Cook Inlet Belugas was criticized in my state as widely underestimating the potential economic impact. How does NOAA assess the economic impacts of its actions and is this something we need to strengthen? If so, what steps should be taken?

Answer. *Cook Inlet Beluga Whale Critical Habitat Designation*—NMFS conducted an economic and socioeconomic assessment of the expected impacts (positive and negative) uniquely attributable to designation of critical habitat for Cook Inlet beluga whales. NMFS designed an analytical methodology that first established the baseline condition, against which the directly attributable incremental costs and benefits of critical habitat designation would be compared. The baseline characterized the status quo condition (*e.g.,* Cook Inlet beluga whales "listed," but without "critical habitat designated"). This approach facilitated identification of impacts that derive uniquely from the change made in the status quo baseline state, following critical habitat designation.

Using the best available scientific data and commercial information, the analysis monetized those impacts for which meaningful (useful) estimates could be made, quantifying those that could not be monetized, and including qualitative evaluations of all other relevant costs and benefits, as required by Executive Order 12866 and OMB Circular A–4. The assessment of critical habitat excludes economic impacts uniquely associated with the listing of the Cook Inlet beluga whale population because Congress indicated in the Endangered Species Act (ESA) that economic impacts should not be considered during listing determinations. Those costs are, appro-

priately, part of the baseline condition, because the Cook Inlet beluga is now a "listed" species under ESA. This is significant because the species "listing," itself, mandates a series of consultation, monitoring, accommodation, and compliance costs that accrue whether or not critical habitat is designated for the species. Indeed, this is why the NMFS economic impact analysis was designed to evaluate the incremental costs and incremental benefits uniquely attributable to the designation, to the fullest extent practicable.

The analysis, nonetheless, identified some economic effects (both costs and benefits) that are necessarily co-extensive; that is, not readily amenable to unique attribution. The critical habitat designation mainly affects activities that involve Federal action (*e.g.,* a *Federal* permit, license, or funding) that may destroy or adversely modify critical habitat. Such activities would not necessarily be precluded from going forward, but may require some analysis to determine if and how those activities may proceed in a manner that would not adversely modify or destroy critical habitat. It will often be the case that a proposed activity in critical habitat, involving Federal action, will simultaneously initiate a consultation, based on the ESA jeopardy standard. In these instances, the majority of associated costs would be incurred by the parties to the action, even in the absence of designated critical habitat (*i.e.,* under the pre-designation *status quo*). As noted, only incremental additional costs, above those that accompany the jeopardy consultation, are appropriately attributed to the critical habitat designation in such instances. The analysis was careful to identify such impacts associated with ESA section 7 consultation obligations to the extent practicable.

Procedurally, the designation of critical habitat will focus future ESA section 7 consultations with Federal agencies on key habitat attributes, and avoid unnecessary attention to other, non-essential habitat features. Critical habitat designation may also trigger complementary protections (*i.e.,* benefits) under state or local regulations.

Critical habitat is designated in specific areas of Cook Inlet in which the physical and biological features essential for the conservation of the Cook Inlet beluga whale are found. NMFS described the potential impacts of the designation in the proposed rule and does not expect that critical habitat designation will hamper development or cause any significant economic harm.

In summary, the attributable incremental effect from critical habitat designation does not appear to have the potential to impose significant net adverse effects on the Anchorage area economy.

Steller Sea Lion Biological Opinion and Associated Management Measures—NMFS prepared an economic analysis (Regulatory Impact Review) of the impacts of the protection measures identified in the Steller Sea Lion Biological Opinion and further refined by the agency. NMFS estimated that the action could lead to wholesale revenue losses on the order of $44 million to $61 million per year in directly affected fisheries. Actual revenue losses might be smaller if fleets are able to redeploy to some extent into other fisheries. Job losses in Alaska (including jobs held by residents of other states) were estimated to range between 250 and 750 persons, depending on the ability of the affected fleets to redeploy. Impacts, among them the loss of fishing opportunities, of processing and fleet support business, and of tax or Community Development Quota revenues, would be felt in Alaska and the Pacific Northwest. The remote community of Adak faces the greatest proportional impact from this action.

NMFS Efforts to Improve Economic Analyses—NMFS has efforts underway both in Alaska and nationally to improve its economic analyses of spatial management measures.

In Alaska, predictive models of fishing behavior that estimate the net costs on fisheries of regulatory actions such as closed areas have been developed in the Bering Sea pollock catcher vessel fishery to examine the emergency closure of the Steller Sea Lion Conservation Area in 2000. Qualitative results of this model were utilized in the economic analysis of the recent Steller sea lion protective measures. This model is being updated and will be available to evaluate regulatory actions by 2012. Modeling of the catcher processor and mothership sectors of the Bering Sea fishery is also underway.

Similar models have been developed using historical data to examine vessel behavior in the Bering Sea flatfish fishery. Current research is focused on evaluating how the implementation of the Amendment 80 catch share program for this fishery has altered fishing behavior and reduced halibut bycatch, which has enabled increased fish production and revenue from a number of the species targeted by the fishery. Depending on the behavior of the vessels displaced by the most recent Steller sea lion protective measures, this modeling effort may also provide insight into the net impacts of that action on the fishery. Other research is underway to

develop spatial economic models for the Alaska sablefish fishery and the Gulf of Alaska Pacific cod fishery.

Building upon the spatial modeling efforts of Alaska, NMFS has just launched a national initiative to improve analysts' abilities to estimate the impacts of different regulations on fisheries through the development of a spatial economics toolbox for fisheries (FishSET). The primary goal of this project is to provide analysts with the data and modeling tools necessary to perform better economic analyses of the costs of spatial management actions on fisheries. This initiative is administered by the Pacific States Marine Fisheries Commission and is overseen by NMFS staff in the Alaska Fisheries Science Center. After the toolbox is completed, its first application will be to Alaska fisheries and the first version of the toolbox will be completed in 2012.

Question 10. Section 304(e)(4)(A)(ii) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) provides flexibility to extend the rebuilding timeframe beyond 10 years where the biology of the stock of fish, other environmental conditions, or management measures under an international agreement in which the United States participates dictate otherwise. How many fish stocks are currently under rebuilding plans? How many of those are under rebuilding plans that are longer than 10 years? How many are under rebuilding plans that are 10 years or less?

Answer. The Magnuson-Stevens Act and the National Standard 1 Guidelines provide a great deal of flexibility in rebuilding timeframes to consider the biological needs of the species, as well as the social and economic needs of fishing communities. There are currently 45 fish stocks in rebuilding plans with target end dates; there are currently an additional 8 rebuilding plans that have no target end date due to data limitations. Of those 53, 25 are currently under rebuilding plans that are longer than 10 years; 20 are currently under rebuilding plans that are 10 years or less. Eight rebuilding plans do not have target end dates because the stocks are data-poor and NMFS is unable to predict when they will be rebuilt.

Question 11. How many have had their 10-year clock restarted, and for how long are the extensions, on average?

Answer. South Atlantic Black Sea Bass and Mid Atlantic Summer Flounder are the only two formal rebuilding plans under Section 304(e)(4)(A) of the Magnuson-Stevens Act that were originally 10 years or fewer and were extended. For South Atlantic Sea Bass, the rebuilding plan was re-started in 2006 to comply with Section 304(e)(4)(A) as the original rebuilding plan timeline was created prior to the Sustainable Fisheries Act Section 304(e)(4)(A) authorization. The Mid Atlantic Summer Flounder rebuilding plan was extended from a 10-year plan to a 13-year plan as part of the reauthorization of the Magnuson-Stevens Act in 2006, based on the status and biology of the stock and the rate of rebuilding.

Question 12. How many stocks have already been rebuilt pursuant to the 10 year rebuilding requirement? How many are almost rebuilt?

Answer. Eighteen stocks have already been rebuilt under rebuilding plans that were 10 years or fewer. Twenty stocks are under rebuilding plans that are no more than 10 years, 25 stocks are under rebuilding plans that are more than 10 years, and another 8 stocks are under rebuilding plans that have no estimated time to rebuild because there is insufficient information to estimate rebuilding time. In each case, the length of the rebuilding plan that is selected is based on the following criteria: the status and biology of the stock, the needs of fishing communities, recommendations by international organizations in which the U.S. participates, and interaction of the stock within the marine ecosystem. Fourteen stocks in rebuilding plans have seen increases in biomass so they are no longer considered overfished. As their abundance continues to increase toward the level that supports the maximum sustainable yield, annual catch amounts can also increase.

Question 13. I am concerned that CMSP efforts will have significant economic impacts—deciding who can do what and where (which is what zoning is), inevitably creates economic winners and losers. How will these regional planning bodies will consider these economic impacts of their decisions? Who, exactly, will be sitting at the table with the deep background and expertise in these matters that such weighty decisions require?

Answer. There are over 140 different statutes and regulations that govern the use of our oceans, coasts and Great Lakes. Every day, agencies make ocean-related permitting decisions without accounting for potential impacts beyond their sector of regulation. CMSP is a tool designed to improve data integration and support, provide greater opportunity for stakeholder and scientific input, and create a collaborative, regionally based planning approach to improve decision-making over the long-term. Such multi-use planning will help improve permitting and regulatory

processes by facilitating dialogue to work through potential conflicts prior to permitting decisions. Evaluating economic, social and environmental data concurrently will increase certainty and predictability for all ocean stakeholders as they make investments in future ocean projects for a variety of uses.

Regional Planning Bodies (RPBs) made up of Federal, State and tribal entities with authorities relevant to CMSP will undertake the planning process to develop CMS plans for their respective regions. They are charged with considering the interests of all users and stakeholders including economic, social and environmental interests. One of the essential elements of the CMSP process is for RPBs to consult scientists and other technical experts to ensure that CMSP decisionmaking is based on sound science and the best available information, which includes socioeconomic data on a variety of ocean uses.

As the demand for ocean space continues to increase, a comprehensive, forward-looking planning process is necessary to help define needs and describe the interplay of those needs to illustrate a vision for the future landscape of our ocean. The CMSP process is designed to bring the best data and information to bear on ocean-use decision-making processes under the guiding principle of sustainability—sustainability of healthy and resilient coastal communities, economies, and resources.

Question 14. Reports indicate a huge plume of debris generated by the tsunami is headed out to sea which in a few years will hit Hawaii, the Pacific Northwest and Alaska. What is being done to monitor this and what can be done in reauthorization of the Marine Debris Research, Prevent and Restoration Act to prepare for this unprecedented amount of debris heading our way?

Answer. NOAA is currently exploring various methods to monitor the debris as it moves across the Pacific Ocean. NOAA's Marine Debris Program and Pacific Islands Regional Office's Observer Program have developed protocols and methods for collecting at-sea information on tsunami debris through the Hawaii swordfish and tuna longline fleets. The Marine Debris Program is also coordinating with NOAA's Office of Marine and Aviation Operations to report observations of marine debris while at sea.

Conversations are also under way to collect observational data from the shipping industry, both through the Chamber of Shipping of America and through international shipping organizations, as well as recreational sailors. An MARAD Advisory is being drafted to warn of possible hazards to navigation and encourage reporting of debris sightings. In addition, an existing partnership between NOAA and NASA to develop at-sea detection capabilities for marine debris may allow overflights to look for marine debris north of the Hawaiian archipelago in spring 2012. NOAA has revised shoreline monitoring protocols to include potential tsunami debris monitoring on existing projects, including the Northwestern Hawaiian Islands debris cleanup in summer 2012. An existing "rapid response" project spearheaded by NOAA to coordinate county, state, Federal, and non-governmental debris removal efforts can be called on and expanded if tsunami debris washes up in the Main Hawaiian Islands.

Many variables affect whether and how long it will take debris items from Japan to reach the United States. It is a matter of years, not days or weeks. It is also impossible to accurately predict ocean currents and winds very far into the future, and thus an exact date of arrival for the debris cannot be given. Independent models run by NOAA and University of Hawaii researchers agree on the general direction and drift rate of debris generated by the tsunami in Japan. If the models are correct, debris could pass near or wash ashore in the Northwestern Hawaiian Islands in spring 2012, approach the West Coast of the United States in 2013 or 2014, and circle back to Hawaii in 2015 to 2016. The impacts in U.S. waters and along U.S. shorelines are difficult to predict without a better idea of debris types and density. However, the most likely impacts include those to navigation, pelagic fisheries, recreation and tourism in coastal areas, and marine and coastal species through habitat alteration and ingestion.

The Marine Debris Research, Prevention, and Reduction Act (Act) created NOAA's Marine Debris Program. The legislation allows NOAA to support national and international efforts focused on preventing, identifying, and reducing the occurrence of marine debris and its impacts. NOAA accomplishes this goal through scientific research and assessment of marine debris; prevention and reduction efforts; developing partnerships, tools and techniques; and education and outreach. The Act was signed into law in 2006 and is up for reauthorization in 2011. Reauthorization of the Act will ensure NOAA can continue to have the legislative mandate to continue the important tasks of addressing high-priority marine debris issues that arise across the country, including events such as the Japan tsunami.

Question 15. Please provide a summary of NOAA Ship sea days for FY08, 09, 10 and your best projections for FY11, broken down by broad mission areas (fisheries surveys, hydrography, etc.). Please also provide your best estimate of total number of sea days which can be accomplished with proposed FY12 funding. We understand that the FY12 numbers may not be broken down by mission area yet, and the total number will be subject to change depending on how the days are allocated between missions and many other variables. Fuel prices are also an important variable that cannot be precisely predicted, but assume current fuel prices remain in effect for 2012 for this exercise.

Answer. Please see below for a breakdown of FYs 08, 09, 10, and 11 by broad mission areas:

		Days at Sea				
NOAA Ship	Mission	FY08	FY09	FY10	FY11	Comments
Albatross IV	Fisheries Research	132	43	—	—	Decommissioned FY09
Bell M. Shimada	Fisheries Research	—	—	91	131	Commissioned FY10
David Starr Jordan	Fisheries Research	229	85	—	—	Limited operational status Mar. 2009, Decommissioned FY10
Delaware II	Fisheries Research	195	200	174	160	Includes DAS for NRDA/DWH Emergency Response in FY 2010
Gordon Gunter	Fisheries Research	118	224	170	171	Includes DAS for NRDA/DWH Emergency Response in FY 2010 & FY 2011
Henry Bigelow	Fisheries Research	158	170	149	185	Includes DAS for NRDA/DWH Emergency Response in FY 2010
John N. Cobb	Fisheries Research	48	—	—	—	Decommissioned FY08
Miller Freeman	Fisheries Research	194	131	150	14	
Oregon II	Fisheries Research	221	213	115	170	Includes DAS for NRDA/DWH Emergency Response in FY 2010 & FY 2011
Oscar Dyson	Fisheries Research	217	208	202	123	
Oscar Elton Sette	Fisheries Research	213	202	196	148	
Pisces	Fisheries Research	—	46	157	180	Commissioned FY 2010—Includes DAS for NRDA/DWH Emergency Response in FY 2010 & FY 2011
McArthur II	Fisheries Research	170	183	162	192	Includes DAS for NRDA/DWH Emergency Response in FY 2011
Nancy Foster	Fisheries Research	0	0	26	19	
Fairweather	Hydrographic Survey	125	173	196	132	
Ferdinand Hassler	Hydrographic Survey	—	—	—	27	Expected Commissioning FY12
Rainier	Hydrographic Survey	185	183	0	61	Major Repair Period FY10
Rude	Hydrographic Survey	21	—	—	—	Decommissioned FY08
Thomas Jefferson	Hydrographic Survey	184	172	185	129	Includes DAS for NRDA/DWH Emergency Response in FY 2010
Ka'imimoana	Climate Research	222	145	205	210	
Hi'ialakai	Oceanographic Research	205	178	206	168	

		Days at Sea				
NOAA Ship	Mission	FY08	FY09	FY10	FY11	Comments
McArthur II	Ecosystem Survey	35	0	44	0	
Nancy Foster	Ecosystem Survey	181	157	150	132	Includes DAS for NRDA/ DWH Emergency Response in FY 2010
Ronald H. Brown	Oceanographic Research	193	216	140	111	
Okeanos Explorer	Ocean Exploration	35	127	180	143	
Total DAS		3,281	3,056	2,898	2,606	

For FY 2012, the planned DAS are 2,675.

Question 16. NOAA and the Coast Guard have an aging ship fleet and you are working to replace the oldest ships. Is your fleet recapitalization plan on track? Please provide an update on how the schedule provided in the original 2008 Fleet Recapitalization plan is proceeding. Are the replacements it identified on schedule?

Answer. In accordance with the plan, in FY 2009, NOAA was able to support the acquisition of Fisheries Survey Vessel 6 (*FSV6*), to replace *David Starr Jordan*, as well as to undertake the Major Repair Period (MRP) for the *Rainier*. In FY 2010, NOAA decommissioned *David Starr Jordan* and undertook the MRP for *Oregon II*. Below is the status of additional milestones outlined in the plan:

FY 2009

- $78 million FSV6 (ARRA funded)
- $6.98 million *Rainier* MRP (PAC funded)

FY 2010

- $4 million *Oregon II* MRP (ARRA funded)

NOAA Fisheries Survey Vessel 5 (FSV5) to replace Oregon II

- NOAA requested funding for the FSV5 design in the FY 2010 and FY 2011 President's Budgets. Funding was not appropriated. Because a key requirement for the FSV5 is that it be a shallow draft vessel, NOAA cannot use the current Dyson-class design. NOAA is reconsidering design and procurement options for FSV5 which will reduce acquisition risk and improve the quality of the end product.
- Within the Ship Recapitalization Plan, a MRP to extend the service life of *Miller Freeman* was planned for FY 2013, however in FY 2009 an assessment confirmed that the vessel was rapidly deteriorating and required an accelerated MRP. An MRP to extend the service life of *Ka'imimoana* was planned for FY2020-FY2021. However, recent ship assessments have shown that vessel has degraded to a point where an MRP is required earlier. $11.6 million is requested in the FY2012 President's Budget for repairs to *Miller Freeman* and *Ka'imimoana.*

Question 17. We're excited about the University of Alaska's new Arctic-capable research ship, the R/V *Sikuliaq,* whose keel was just laid. NOAA's research ships often need different capabilities than University ships, such as special sonar systems for making nautical charts, or the ability to tow large nets for fisheries research. As we look for NOAA to expand its capabilities to provide critical services like charts and fish stock assessments in the Arctic, do you have plans or a need for a similar Arctic-capable research ship? How will NOAA conduct its unique at-sea research missions in the Arctic?

Answer. NOAA does not have a separate Arctic fleet. NOAA's hydrographic survey vessels *Rainier* and *Fairweather* meet the old American Bureau of Shipping standard for ice-strengthened hulls, as do the T–AGOS vessels transferred from the Navy, such as the *McArthur II.* NOAA's newer fisheries research vessels *Oscar Dyson* and *Bell M. Shimada* have limited ice capability. All five vessels work in and around Alaska and could operate north of the Bering Strait in a limited capacity during the summer months and in loose ice. NOAA also continues to investigate use of Autonomous Underwater Vehicles (UAVs) and Unmanned Aerial Systems (UAS) which could potentially be used at or near ice edge boundaries for survey operations. NOAA, however, cannot currently sustain long-term projects in the Arctic with its own fleet and would instead rely on the Coast Guard's HEALY for ice breaker capacity, with other alternatives for ice capability including contractors and Univer-

sity-National Oceanographic Laboratory System (UNOLS) or other academic infrastructure.

Question 18. In Alaska, we have several villages which are in need of relocation because of the impacts of climate change (reduced sea ice has increased erosion). It is difficult for city planners to know whether it is worthwhile to invest in basic infrastructure like water and sewer services, because we don't know when the villages will have to move. As a result, many rural Alaskans don't have running water or indoor plumbing and are living in Third World conditions. Would the NOAA Climate service help rural Alaskans plan for climate change? How?

Answer. More than anywhere in the United States, NOAA is keenly aware of the rapidly unfolding changes in Alaska's climate and the significant impacts already being experienced. NOAA's proposed reorganization to establish a Climate Service Line Office would consolidate management of the agency's existing climate science and service capabilities. In doing so, NOAA would be organized to more efficiently and effectively respond to the increasing user demands for climate information, including those of rural Alaskans needing to plan for, and respond to, the effects of their changing climate. NOAA has many existing capabilities and assets based in Alaska to help communities who are experiencing, or are at risk of experiencing, a changing climate. The proposed Climate Service would enable NOAA to better integrate these types of climate activities within the agency and with other partners, including Federal, state, local and tribal organizations, and would also provide Alaskans with easier access to this critical climate information.

NOAA has significant existing climate and weather assets in Alaska including the Alaska Center for Climate Assessment and Policy, which is one of NOAA's Regional Integrated Sciences and Assessments (RISAs), the NOAA-funded Cooperative Institute for Alaska Research (CIFAR), a regional climate services director based in Anchorage, and National Weather Service (NWS) offices in 16 locations statewide, including the Alaska-Pacific River Forecast Center in Anchorage. These assets currently provide a wide variety of services to Alaskan communities. For example, NOAA's River Forecast Center is responsible for issuing hydrologic forecasts and warnings, including both short-term weather forecasts (between 1 and 5 days) and seasonal climate forecasts (*e.g.,* the Spring Outlook) for river ice and floods. These hydrologic forecasts are issued across the state to help guide community planning in the areas of water resource and flood plain management.

The proposed Climate Service would allow NOAA to more easily and effectively provide integration of these existing assets across multiple capabilities, a common problem when tackling the multidimensional problems associated with a changing climate. One example of this integration is in facilitating the development of regionally-scaled models to predict erosion rates for rural Alaskan communities by linking existing research on Alaskan permafrost melting and coastal storms. Additionally, the proposed Climate Service could efficiently link different capabilities within NOAA to realize operational products that predict, at long lead time, when conditions would be especially favorable for freezing rain. This would help subsistence hunters in Alaska by predicting caribou die-offs when the animals cannot get to their food sources under winter snow and ice. Advanced notice of these precipitation events could allow for changes in limits or quotas and avoid food shortages.

Today, NOAA's climate science and service capabilities in Alaska and around the country fall under multiple line offices, each with separate budget execution responsibilities and leadership. The goal of the proposed reorganization to create a Climate Service is to bring many of these climate capabilities under a single Line Office management structure. This would allow for coordination and execution of these services in a more efficient manner; thus delivering much needed climate information to Alaskan communities more effectively.

The proposed Climate Service line office within NOAA would create a structure by which local user needs for reliable and authoritative climate data, information and decision support services could be communicated up through NOAA to help inform science and service priorities, and in turn, feedback would be provided to users on a regular basis. This will help NOAA strengthen our ability to respond to the rapidly increasing demand for accessible and timely climate services—the kind of services that rural Alaskans need to plan for and adapt to changing climate conditions.

Question 19. NOAA's weather radio program is a great service, but these days a large part of the population has smart phones and is so connected to information by means other than radio, like text messaging and twitter. How is NOAA using these new pathways to get the word out about tornados, flash floods and other dangerous storms?

Answer. NOAA's National Weather Service (NWS) encourages the public to receive official Emergency Alert System notifications for severe weather warnings and alerts in multiple ways, including via NOAA Weather Radio (NWR) All Hazards, commercial television and radio, the Internet, cell phone and other wireless services, and through local systems like tornado sirens and reverse 911, a telephone messaging system that warns those at risk in a specific geographical location. NWS also encourages use of state and local emergency management and also private sector services such as AccuWeather, The Weather Channel, and many television stations, which provide texts or e-mails to individuals who opt to receive weather warning information for their area.

NWS is exploring new pathways to deliver urgent information, such as social media. For example, NWS uses Facebook, in addition to its routine methods, to communicate its life-saving information. Local weather forecast offices in the South used social media during the April tornado outbreak to spread the word of these dangerous storms. NWS is also improving its mobile service to provide an improved interface and graphical features such as radar and satellite imagery.

In addition, NWS has been using Twitter for about a year to collect storm reports from spotters. NWS is currently formulating a prototype for issuance of warnings via Twitter. Additionally, for its core partners such as emergency managers, community leaders, and other government agencies, NWS launched an experimental mobile alerting service, iNWS, to communicate important decision-making information.

Another important new Federal pathway supported by NWS and FCC is FEMA's automated Personal Localized Alerting Network (PLAN), announced the week of May 9 in New York City. The service will be available through participating wireless carriers nationwide by April 2012. PLAN is a new public safety system that allows customers who own an enabled mobile device to receive geographically-targeted, text-like messages alerting them of imminent safety threats in their area, even while they are traveling.

Question 20. NOAA's weather websites can be a bit tricky to use, and finding the right information can be a challenge. Do you all have any plans to overhaul your weather web interface to make it easier to use?

Answer. NOAA's National Weather Service (NWS) recognizes the need to improve the ease of use and discovery of the suite of products, services and information provided to the public and our partners through *Weather.gov*. With available resources, the NWS is making improvements to *Weather.gov*'s look and feel this year. Future improvements to the functionality, navigation and content offerings will be reviewed as resources are available.

Question 21. The National Weather Service recently ran pilot projects to improve aviation weather and emergency response meteorology services. The aviation projects in Chicago, New York and Atlanta resulted in significant reductions of weather delays for commercial air traffic. Does NOAA plan on expanding on the successes of these pilot projects? How are those efforts going? If NOAA does plan on expanding these pilots, when should we expect to see the results in place?

Answer. NOAA's National Weather Service (NWS) plans to extend the processes created for the pilot project known as Golden Triangle to San Francisco. Unlike the Golden Triangle area that encompasses Chicago, Atlanta, and the New York metro airports, San Francisco experiences delays not only due to land and sea-based fog, but also from higher cloud ceilings in the approach corridor that would not pose problems for other airports. Thus, accurate cloud and visibility forecasts are crucial, especially in the early morning national air traffic planning timeframe, for deciding when to release trans-continental and regional flights to ensure timely landing and avoid costly airborne holds or diverts to other airports. NWS is currently evaluating the service and resource requirements to implement improvements in San Francisco and expects to implement in 2012.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. OLYMPIA J. SNOWE TO DR. JANE LUBCHENCO

Question 1. As you know, the first phase of the independent review of New England's groundfishery "A Review of the New England Fishery Management Process," was released on April 26. One finding of the report states that, "Cooperative research is seen as an effective tool for fostering trust between NMFS and stakeholders. Many see the value of cooperative research as a method for improving science and fostering trust between stakeholders and NMFS." Do you believe the report suggests that NOAA should reprioritize cooperative research in its Fiscal Year 2012 budget?

Answer. The Federal Cooperative Research program has been operating in the Northeast since 1999. NOAA strongly supports cooperative fisheries research and included a total of $13.2 million for cooperative research in the President's FY 2012 budget request. In response to the Management Review, we are redoubling our efforts to plan and work together with research and academic institutions and fishermen to answer some of the critical questions facing New England fisheries. Additionally, we will conduct expedited mid-term review of the 2009 strategic plan for cooperative research to involve all regional cooperating institutions. The results will be incorporated into FY 2012 prioritization decisions.

In addition to fostering trust between fishery managers and stakeholders, cooperative research is an important source of information for fishery management decisions. To improve the prioritization of available funds, NOAA's National Marine Fisheries Service (NMFS) needs to ensure that all cooperative research projects are meeting the priority requirements of NMFS, the Regional Fishery Management Councils, the Atlantic States Marine Fisheries Commission, and our stakeholders. NMFS also needs to ensure that the research is complementary and not redundant. In 2009, NMFS conducted a strategic review of the Northeast Cooperative Research Program and has been implementing the highest priority themes of that review. Since many things have changed in the ensuing period, NMFS will conduct another round of stakeholder meetings from Maine to North Carolina to ensure that up-to-date stakeholder priorities are considered in funding decisions. NMFS has formed an informal "roundtable" committee to review programs and ensure efficient use of funds and expertise in the region. The committee began in 2009 and includes members of the Northeast Cooperative Research Program, NMFS Mid-Atlantic Research Set-Aside Program, Northeast Consortium, and Commercial Fisheries Research Foundation. The School for Marine Science and Technology (SMAST) and the Gulf of Maine Research Institute have been participating since February 2011. These discussions will continue and help ensure that redundant activities are identified and this information is used in making final Northeast Cooperative Research Program funding decisions.

Question 2. Are there any other conclusions from the report that alter NOAA's assessment of budget priorities?

Answer. NOAA plans to build on the current fishery management system and improve the overall process as a result of Phase I of the Management Review and we can do this within existing resources. Two specific issues that we will be working on within current resources are explained below. Some of the recommendations will require much more thought and analysis and the agency plans to explore that in more depth in Phase II of the Management Review.

Data Management—System Design

NMFS is taking immediate specific steps to improve our data management systems. Over the years, data collection programs and data management systems have been developed in our Northeast Regional Office and Science Center as needed. The Management Review finds that our systems are not integrated, some data collections seem redundant, stakeholders are unsure of where to turn for data, and there are inefficiencies in the delivery of data and analytical products. We will work to address this.

Under the current budget, NMFS plans to initiate a program to develop requirements for consolidation of fishery-dependent reporting/collection systems and the underlying data management systems in the Northeast region.

Data Management—Electronic Vessel Trip Reports

To improve the timeliness and accuracy of fisherman-reported data and simplify industry reporting requirements, our Regional Office and Science Center have been working with the industry to transition from paper to electronic logbooks.

Federal permit holders are required to maintain and submit fishing logs for each fishing trip, regardless of target species—Vessel Trip Reports. Electronic logbooks (e-Vessel Trip Reports) will speed processing of data, likely reduce errors in the data and relieve the industry of having to obtain, carry and fill-out paper logbooks. The program will be available initially on a voluntary basis to vessels in multispecies sectors.

Question 3. The Federal Energy Regulatory Commission has developed a streamlined permitting process for innovative tidal facilities that are under five megawatts or less. As you know there are major opportunities for renewable energy in our oceans, but the permitting process can sometimes delay innovative companies from developing the next generation of energy facilities. FERC's streamlined permitting process is for projects of five megawatts or less, that are removable or able to shut down on relatively short notice, located in waters that have no sensitive designa-

tions, and for the purpose of testing new hydro technologies or determining appropriate sites for ocean, wave, and tidal energy projects. Do you believe that NOAA could implement a similar permitting process, would you support developing this proposal, and if necessary would you support legislative changes allowing NOAA to streamline permits for pilot scale innovative clean-energy projects?

Answer. NOAA is not considering implementing new or separate permitting/consultation processes for hydrokinetic technologies. NOAA is actively collaborating with industry, FERC and other agencies to meet permitting requirements as efficiently as possible. NOAA continues to encourage FERC and potential applicants to consult early with NOAA staff to facilitate intra-agency coordination and minimize adverse environmental effects as well as delays in FERC's permitting process. NOAA believes that the current process is sufficient and additional legislation is not necessary.

Hydrokinetic energy encompasses wave, tidal, ocean current, and in-stream riverine energy production. States and private entities looking to develop hydrokinetic energy are turning to coastal areas that overlap with NOAA's trust resources to site their projects. NOAA reviews these projects and endeavors to provide scientific expertise on trust resources, such as fisheries, marine mammals, endangered species, marine sanctuaries, and the coastal zone to minimize adverse environmental impacts from siting and operation of projects in the early stages of development. NOAA's review may result in the need for consultations or authorizations related to several important statutory mandates. While some of these environmental consultations or authorization processes allow for more expedited reviews under certain circumstances, the potential environmental impacts of some offshore energy projects may necessitate a lengthier review and assessment process.

For example, NMFS is responsible for authorizing the take of certain marine mammals incidental to specific activities under the Marine Mammal Protection Act, provided certain legal requirements are met (16 U.S.C. § 1371(a)(5)). For activities with no potential to cause marine mammal mortality, Congress implemented an expedited 120-day process for issuing 1-year Incidental Harassment Authorizations. For activities with a potential to cause marine mammal mortality, NMFS must promulgate 5-year regulations to govern the authorization of take incidental to those specific activities and issue Letters of Authorization pursuant to those regulations. Although it varies, these regulations typically take about 18 months to process. If an incidental take authorization is needed, NMFS anticipates that the expedited Incidental Harassment Authorization process is likely appropriate for the pilot activities described in the question.

Also, Section 7(a)(2) of the Endangered Species Act (ESA) (16 U.S.C. § 1536(a)(2)) requires all Federal agencies to consult with NMFS when their *actions* "may affect" federally threatened or endangered species, or their designated critical habitat. Actions for the purpose of consultation are all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies in the United States or upon the high seas, including the granting of licenses and permits for hydrokinetic energy. NMFS has an expedited informal consultation process for activities that are not likely to adversely affect endangered and threatened species. This process takes approximately 30 days. For projects that meet FERC's streamlined hydrokinetic pilot project permitting process requirements (five megawatts or less, removable or able to shut down on relatively short notice, located in waters with no sensitive designations), and where environmental baseline information is readily available, the 30-day process may be appropriate. For those projects that do not meet the requirements or are lacking baseline information, a formal ESA consultation would likely be necessary. This is a 135-day process that is completed with the issuance of a biological opinion. There have been at least two instances where formal ESA consultation was required for marine hydrokinetic projects, both of which were proposed for siting within, and were likely to adversely affect, sensitive areas designated as critical habitat for the conservation of ESA-listed Pacific salmon. There are a few issues that FERC could address in their guidance and regulations that may help to streamline the ESA consultation process for pilot projects:

- defining *"sensitive designations"* for areas that will not be suitable sites for pilot projects;
- defining *"unacceptable environmental effects"* to living marine resources and their habitats;
- developing explicit steps in the pilot licensing process for interested parties to submit conditions, prescriptions and recommendations to avoid/minimize adverse environmental effects.

NMFS also conducts Essential Fish Habitat consultations for marine hydrokinetic projects under the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). Opportunities currently exist under the Magnuson-Stevens Act to streamline the Essential Fish Habitat consultation process for Federal actions with existing environmental review processes, such as the Endangered Species Act and National Environmental Policy Act (*see* 50 C.F.R. § 600.905–930). NMFS looks forward to using these streamlined procedures, as appropriate, with FERC.

It should be noted that many of the environmental impacts of emerging renewable ocean energy technologies are unknown. Limited scientific information by which to assess potential environmental effects of marine hydrokinetic devices can challenge NOAA's ability to implement its mandates and authorities. NOAA recognizes the importance of having an environmental baseline for these projects, and is working to address knowledge gaps in order to ensure smoother permitting and licensing of renewable ocean energy projects. For example, in FY 2010, NOAA, along with the U.S. Department of Energy and the U.S. Department of the Interior's Bureau of Ocean Energy Management, Regulation and Enforcement, funded the following projects under the National Oceanographic Partnership Program:

- Characterization and Potential Impacts of Noise Producing Construction and Operation Activities on the Outer Continental Shelf (Cornell University)
- Protocols for Baseline Studies and Monitoring for Ocean Renewable Energy (Pacific Energy Ventures)
- Roadmap: Technologies for Cost Effective, Spatial Resource Assessments for Offshore Renewable Energy (University of Massachusetts)
- Evaluating Acoustic Technologies to Monitor Aquatic Organisms at Renewable Energy Sites (University of Washington)
- Developing Environmental Protocols and Monitoring to Support Ocean Renewable Energy and Stewardship (University of Texas)
- Visual Impact Evaluation System for Offshore Renewable Energy (University of Arkansas)
- Bayesian Integration Marine Spatial Planning and Renewable Energy Siting (Parametrix)
- Developing Environmental Protocols and Monitoring to Support Ocean Renewable Energy and Stewardship (University of Rhode Island)

NOAA looks forward to working with the Committee on this issue.

Question 4. Could you please provide the Committee with both the current number of employees within the Office of National Marine Sanctuaries and the number employed 10 years ago?

Answer. The table below provides an overview of the number of FTEs and NOAA Corps officers with the Office of National Marine Sanctuaries in both FY 2002 and FY 2011:

Year	Federal (FTEs)	NOAA Corps	Total
2002	116	7	123
2011	182	8	190

The reason for the staff increase is largely due to: (1) the hiring of additional staff at Thunder Bay National Marine Sanctuary following finalization of its designation in 2002 (designation was initiated in 2000); (2) the hiring of new staff following designation of the Papahanaumokuakea Marine National Monument in 2007; (3) the hiring of staff to assist in the development and implementation of management plans at all 14 field sites; (4) the addition of staff to manage increased system-wide IT requirements; and (5) the hiring of staff to coordinate construction and/or renovation of 18 major facilities, visitor centers, and exhibits at 10 sanctuaries.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. JIM DEMINT TO DR. JANE LUBCHENCO

Question 1. Dr. Lubchenco, I believe you are aware of concerns that were recently raised at a recent House Natural Resources Committee hearing, which you were present at, regarding the relicensing of the Catawba-Wateree Hydro Project in South Carolina. The National Marine Fisheries Service (NMFS), which has an advisory role in the relicensing of hydropower facilities, seems to be going to great lengths to delay this project in order to protect a fish, the shortnose sturgeon, that

hasn't been within 70 miles of the dams in question over 100 years. In light of this, I have four questions for which I would like to request a response. If the actual Federal agency in charge of approving the hydropower license, FERC, believes that the Catawba-Wateree Hydro Project poses no adverse risk to shortnose sturgeon and the local and state resource agencies are in agreement, then why is the NMFS delaying the project and indicating that anything less than constructing fish passages on all the dams or removing them entirely is unacceptable?

Answer. While FERC is the agency responsible for approving a license, the Federal Power Act grants NOAA's National Marine Fisheries Service (NMFS) authority to: (1) issue mandatory fishway prescriptions to ensure safe, timely, and effective upstream and downstream fish passage (*e.g.,* fish ladders, juvenile bypass facilities); and (2) provide recommendations to protect, mitigate damages to, and enhance fish and habitats at FERC-licensed hydropower projects. Further, the Endangered Species Act requires FERC to consult with NMFS to ensure that proposed Federal actions are not likely to jeopardize the continued existence of any species listed as endangered or threatened, or result in the destruction or adverse modification of designated critical habitat for those species. NMFS believes the dams, flow rates and other components of the Catawba-Wateree Hydro Project are likely to adversely affect the endangered shortnose sturgeon by:

- Capturing the fish;
- Subjecting the fish to poor water quality;
- Impeding the fish's access to suitable spawning habitat upstream of the dams; and
- Reducing suitable spawning habitat downstream of the dams.

When NMFS determines a project is likely to adversely affect a threatened or endangered species, then the agency must formally evaluate these effects in a biological opinion pursuant to section 7 of the Endangered Species Act (ESA) (16 U.S.C. § 1536). The agency is in the process of gathering the information needed to prepare this biological opinion and, thus, has not yet made any determinations regarding fish passage requirements. NMFS will continue to work cooperatively with Duke Energy and the Federal Energy Regulatory Commission (FERC) to identify the best solutions to mitigating project impacts to shortnose sturgeon and other listed species.

The Catawba-Wateree branch of the Santee River Basin likely provided important spawning habitat for shortnose sturgeon and other anadromous fish before dam construction and hydropower operations blocked access for the fish to migrate between their spawning and feeding grounds. With limited research on a rare fish and the barriers to migration, it is not surprising that sturgeon had not been detected at the Wateree Dam for many years. At a May 24, 2011, meeting between FERC, NMFS, and Duke Energy to discuss the relicensing of the Catawba-Wateree Project, the South Carolina Department of Natural Resources reported that they had tracked two spawning-condition shortnose sturgeon to the Wateree Dam this spring.

Question 2. What new data is the NMFS basing its position on in this case?

Answer. The Endangered Species Act requires that NMFS and all Federal agencies use the best available scientific and commercial information when making decisions regarding endangered species, including current information available regarding life history. NMFS has been working with Duke Energy and FERC to identify the best available information to use in this consultation, and is considering data and information from research projects funded by NMFS, state partners and others. The agency understands the need for better data on shortnose sturgeon in the Southeast Region and is currently supporting a 3-year project for that purpose at $4 million through South Carolina Department of Natural Resources.

Question 3. When can we expect the NMFS to produce a BiOp for the relicensing of the hydro project, which FERC requested completion of over a year ago?

Answer. NMFS has been working with Duke Energy and FERC for some time to better understand the details of this project, including how FERC intends to implement the *Federal Threatened and Endangered Species Protection Plan for Shortnose Sturgeon* filed with the license application. The agency met with Duke and FERC on May 24, 2011, to resolve all outstanding questions and issues so they may initiate the consultation process. The meeting provided for a positive exchange of information that will allow NMFS to initiate consultation.

The Endangered Species Act provides NMFS up to 135 days to issue a biological opinion once they initiate consultation. However, the agency understands the relicensing of this project is of great importance to the regional economy and is committed to producing a biological opinion on the project as soon as possible once it receives the information needed to effectively evaluate the project.

Question 4. When can we expect resolution on this issue?

Answer. NMFS has worked, and will continue to work, with the utilities, state and Federal resource agencies, and FERC to develop science-based, practical fish passage prescriptions and flow recommendations for this project. However, FERC is the action agency for purposes of ESA Section 7 consultation, with the ultimate responsibility to determine the license conditions that will avoid jeopardizing listed species. NMFS will continue working with FERC and all parties involved in this project to ensure good communication and effective resolution of issues regarding project impacts to listed species as they complete their role in the relicensing and consultation process. NMFS's goal is to expeditiously meet both the business needs of the utilities for relicensing and the passage needs of the endangered shortnose sturgeon and other species adversely impacted by the project.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. ROGER F. WICKER TO DR. JANE LUBCHENCO

Question 1. In the Gulf of Mexico, NOAA has relied on long-standing research partners, particularly within its Office of Oceanic and Atmospheric research, which have been leveraged for their expertise and capabilities to, "more efficiently and effectively serve the Nation," according to NOAA's own FY2012 Budget Summary. Two such programs are the Northern Gulf Institute (NGI) and the National Institute for Undersea Science and Technology (NIUST). These institutions partner with NOAA to conduct critical research in the northern Gulf, and were particularly crucial to NOAA fulfilling its mission following the *Deepwater Horizon* explosion and subsequent oil spill. As long-term impacts on the Gulf ecosystem are studied following the oil spill, how will NOAA utilize the expertise and resources of NGI and NIUST?

Answer. NGI and NIUST are both valuable partners to NOAA, providing research and expertise that advance NOAA's mission. Specifically, the Seabed Technology Research Center (STRC) within NIUST at the University of Mississippi is the managing partner of the Methane Hydrate Seafloor Observatory, which provides NOAA with methane hydrates research capability in the Gulf. Current STRC research activities focus on understanding the formation and dissociation of gas hydrates, which are ice-like crystalline structures that encapsulate methane gas molecules. This research capability and the proximity of the observatory to the *Deepwater Horizon* BP oil spill site proved critical to our understanding of the ultimate fate of oil from the spill, and NOAA will continue to utilize this expertise as a result of the long-standing relationship with NIUST. NOAA also utilizes NIUST's significant capability in biotechnology, including the development of new products from the sea (primarily drug discovery and agrochemicals) for commercial use, and an extensive marine biotechnology repository. In addition, new technologies have been applied to questions related to healthy coasts, sustainable fisheries, predicting environmental change, corals, reefs and marine ecosystems.

NGI also provides considerable expertise that NOAA utilizes directly. As a competitively-awarded NOAA Cooperative Institute (CI), NGI develops, operates, and maintains an increasingly integrated research and transition program focused on filling priority gaps and reducing limitations in current Northern Gulf of Mexico awareness, understanding and decision support. Partnering with five academic institutions and NOAA, NGI is a collaboration led by Mississippi State University that includes the University of Southern Mississippi, Louisiana State University, Florida State University, and the Dauphin Island Sea Lab. Specifically, NGI has three areas of expertise that NOAA relies heavily on: social science, remote sensing, and coastal geomorphology. Each of these topical areas is critical to research investigating the long-term impacts on the Gulf ecosystem following the oil spill.

Question 2. Considering NGI and NIUST's expertise in and contributions to ocean research in the northern Gulf of Mexico, will NOAA find ways to support these partnerships in FY 2012 and beyond?

Answer. NIUST has received congressionally directed funding in FY09 and FY10 through the NOAA Office of Oceanic and Atmospheric Research (OAR). NOAA did not request or receive funds for NIUST in Fiscal Year (FY) 2011. NOAA will continue to look for opportunities, possibly through competitive grants, to continue strong partnerships with institutions like NIUST in the future.

With regard to NGI, NOAA is also committed to the long-term health of the program. NGI funding historically has been funded through a combination of congressionally-directed and administration-requested funding. NGI was established as a competitively-awarded CI in 2006. As part of the CI review process, NGI underwent a thorough external review, chaired by NOAA's Science Advisory Board, in 2010.

The independent review team gave NGI a score of "outstanding," and NOAA has renewed an additional 5 year extension for NGI as a result. The score of "outstanding" is only given in cases where the research themes of the CI are of clear scientific benefit to NOAA's mission goals through the partnership.

Question 3. As we approach the 1-year anniversary of the BP oil spill, many questions remain regarding the fate and transport of the oil, the economic and environmental impacts of the spill, and how best to respond to future events. Academic institutions and research organizations in the northern Gulf are particularly well qualified to gather necessary information, as well as utilize existing resources to effectively study this unique ecosystem. Will NOAA look to local expertise first, with priority over experts from other regions of the U.S., to conduct research related to the BP spill?

Answer. As the scientific lead for coastal and marine spills, it is critical that NOAA bring the best available science and tools to improve decision-making during responses.

The NOAA Office of Response and Restoration (OR&R) works closely with academic institutions and research organizations along the Gulf Coast in many facets of oil spill response, assessment and restoration. For example, NOAA utilizes experts at the Environmental Studies Department of Louisiana State University (LSU) for analytical chemistry support for oil spills across the country. LSU provides NOAA with chemical hazard and risk assessment analyses to understand the behavior of oil and chemicals in the environment and associated risks to natural resources and human health. In addition, NOAA sponsored a workshop titled "Coordinating Research and Development on Oil Spill Response in the Wake of *Deepwater Horizon*" on March 22–24, 2011 in Baton Rouge, LA. The purpose of this meeting was to bring together experts from across a broad spectrum of organizations, including state agencies, Gulf Coast academic institutions and private research organizations, to address the state of future oil spill response research and best practices.

The FY 2012 President's Budget request includes an increase of $2.9 million for NOAA to develop an oil spill research and development (R&D) program. The funds would support external grants in an open and competitive process. The grants will be focused on priority oil spill research areas, including: oil fate and behavior effects from deepwater releases, response and mitigation techniques in extreme and remote environments (*e.g.,* outer continental shelf or arctic regions), long-term effects on species and habitats, tools for natural resource damage assessment and restoration, and human dimensions of oil spills.

Question 4. NOAA's National Weather Service (NWS) provides critical services which defend our Nation against severe weather. As part of its mission, the NWS collaborates with other Federal agencies, the private sector, and academic institutions to collect weather-related data to accurately forecast severe weather events and issue proper warnings to Americans. Such severe weather includes hurricanes, which produce high winds and storm surges, posing a dire threat to life and property, particularly for our Nation's coastal residents. What existing capabilities do the NWS and its partners currently utilize to measure wind speeds and storm surges associated with storms that impact coastal zones of the U.S.?

Answer. NOAA operates an array of surface and marine observing systems to measure winds and surges associated with coastal zone storms.

NOAA's National Data Buoy Center (NDBC) maintains a network of buoys. The buoys provide continuous observations, including sustained wind speed and gusts, wind wave and swell heights.

NOAA's National Ocean Service (NOS) maintains the National Water Level Observing Network (NWLON) to provide astronomical tide predictions. This network of water level observations, combined with tide predictions, is critical to NWS forecasts and warnings for the coastal flooding associated with major storms. In addition, meteorological sensors are installed on most NWLON stations and these data are also used by NWS forecasters. These observations are an important part of the historical meteorological and oceanographic record, archived at NOAA's National Climate Data Center.

The NWS has Automated Surface Observing Systems throughout the Nation, including coastal locations, which provide continuous observations of wind direction, wind speeds and gusts, among other measurements.

In addition, marine mesonet data (from nearshore and offshore observing platforms) are also provided by international partners, Integrated Ocean Observing System (IOOS) partners, universities, private companies, and local governments. These observations are shared among governments and private organizations. In addition, nearshore and offshore observing platforms are maintained by universities, private

companies, and local governments; these observations are shared with governments and private organizations.

Question 5. What other data measures do the NWS and its partners collect before, during, and after storms strike American coastal zones, and how are these data used?

Answer. NOAA and its partners collect storm damage data, water level information, and storm extent and timing.

Local NWS offices and Centers gather data through storm surveys. Trained employees of the NWS offices survey damage on the ground and sometimes through the air. These efforts provide good estimates including valuable information on aspects of the storm that may not have been measured at official observing sites. An example of a key measurement could be high water marks at locations along the coastline after a significant storm surge event. Local NWS offices also train severe weather spotters who also provide the office with similar information.

The reporting, collection and analysis of storm surge data are critical for NWS forecasts and warnings during tropical and extratropical storm events. After these storms, the data are used for forecast and model verifications. Data are also used by other Federal, state, and local governments and the insurance industry in post-storm response activities and for planning purposes.

The U.S. Geological Survey (USGS) has developed a mobile storm-surge network to capture information on the timing, extent, and magnitude of storm surge. This mobile network consists of water level and barometric pressure monitoring devices that are deployed in the days and hours just prior to a hurricane landfall. This information is shared with NOAA's National Hurricane Center and the U.S. Army Corps of Engineers (USACE).

Question 6. How are partnerships or collaborations between NOAA and academic institutions, private sector entities, or other organizations leveraged to collect weather related data in the coastal zones of the U.S.?

Answer. NOAA leverages partnerships in order to fill data gaps. In exchange, NOAA provides value by developing data standards and quality control.

The best example of organizational leveraging for collection of weather data in the nation's coastal zones is the Integrated Ocean Observing System (IOOS). IOOS is a Federal, regional, and private sector partnership working to enhance our ability to collect, deliver, and use ocean and nearshore information. IOOS draws together many networks of disparate Federal and non-Federal observing systems to produce data, information, and products at the scales needed to support decisionmakers.

As another example, The United States Lifesaving Association (USLA) shares its data related to fatalities, injuries, and rescues associated with hazards in the surf zone such as rip currents, high surf and rough seas. In return, the NWS assists the USLA with outreach and education on surf zone hazards. Both agencies work together on determining the best methods for surf zone and beach safety awareness and education.

Question 7. What estimated costs are saved by NOAA's partnerships with these institutions and entities for the collection of weather-related data in the coastal zones of the U.S.?

Answer. NOAA does not currently have an assessment of these cost savings.

Question 8. NOAA's NWS has an official storm surge model named the Sea Lake and Overland Surges from Hurricane's (SLOSH) model, which the National Hurricane Center uses to create historic runs of winds and storm surges caused by a hurricane using the best available data. How accurate is the current SLOSH model in recreating the magnitude and timing of winds and storm surges associated with severe storms such as Hurricane Katrina?

Answer. Several SLOSH verification studies have shown that forecasted storm surge magnitude is generally within ± 20 percent of the observed peak surge.

Question 9. What is the scale, or precision, of the SLOSH model?

Answer. Though the scale varies, an average precision for all SLOSH basins is 1.9 kilometers. Additionally, SLOSH subdivides some areas in order to model rivers or streams, on a scale of tens of meters.

Question 10. What areas of the United States are covered by the SLOSH model?

Answer. SLOSH has 38 tropical storm basins covering all of the East Coast, Gulf of Mexico, Bahamas, Puerto Rico, Virgin Islands, Hawaii and Guam.

An extratropical version of SLOSH is run to predict high water levels from extratropical storms (*e.g.,* winter storms such as Nor'easters). These 6 basins cover the East Coast, Gulf of Mexico, the West Coast and Alaska.

Question 11. Currently, is there well-established infrastructure to support SLOSH modeling? What comprises this infrastructure?

Answer. The infrastructure consists of the SLOSH team including developers and operational managers at the National Hurricane Center; observational data, the SLOSH modeling and visualization software, websites, and the NWS' central Weather and Climate Operational Supercomputer Systems (WCOSS).

SLOSH is run in a forecast mode on the WCOSS for estimating the storm surge threat associated with hurricane evacuation plans prior to landfalling storms. SLOSH is also run on local work stations in real time at the National Hurricane Center during an active landfalling hurricane.

Question 12. How does the National Data Buoy Center contribute to the infrastructure supporting SLOSH?

Answer. After a storm event, wind observations from NDBC's buoys are part of the data used to validate and verify the hurricane wind fields forecast by SLOSH. Buoy wave observations are used to verify forecast from wave models, a critical component of storm surge.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. JOHNNY ISAKSON TO DR. JANE LUBCHENCO

Question 1. If NOAA is opposed to a fish ladder, can other habitat be identified that can be improved or protected near the New Savannah Bluff Lock & Dam?

Answer. NOAA is not opposed to a fish ladder in principle. The U.S. Army Corps of Engineers (the Corps) has proposed constructing fish passage around the New Savannah Bluff Lock and Dam as a way to restore access for sturgeon (and other fish) to the high quality spawning areas that exist upstream of the dam and mitigate for the loss of sturgeon foraging habitat as the result of the Savannah Harbor deepening. NOAA has recommended that dam removal be considered as an alternative to constructing fish passage, because removal is expected to provide the greatest benefit to species and would not require long-term monitoring and maintenance.

NOAA and the Corps continue to work together to explore fish passage design alternatives, as well as downstream mitigation alternatives. The Corps, with NMFS assistance, hosted a workshop of technical experts on April 25–27 in Augusta, Georgia, to develop and evaluate more effective fish passage design structures that would retain the dam and to explore the possibility of improving or protecting other habitats as sturgeon mitigation in the Savannah River. NOAA would support such habitat conservation measures in addition to fish passage, but our primary goal is to provide sturgeon access to existing spawning habitat upstream of the dam.

Question 2. The Nature Conservancy has focused their efforts on an area which is critical habitat to many species, including the shortnose sturgeon. From their website, "The lower Savannah River, beginning just below the Thurmond Lake reservoir near Augusta and extending to the coastal estuaries, is fed by a number of tributaries, including Brier Creek and Stevens Creek. This portion of the river system—which is the focus of The Nature Conservancy's work—harbors more than 110 species of fish including the robust redhorse and the endangered shortnose sturgeon."

Answer. The New Savannah Bluff Lock and Dam currently blocks sturgeon access to important parts of the Savannah River below the Thurmond Reservoir and Stevens Creek. This area contains large stretches of rocky shoal habitat that does not exist below the dam. The technical workgroup the Corps gathered together in Augusta, Georgia, last month to evaluate mitigation alternatives, concluded no spawning habitat improvements could be made below the dam that would adequately mitigate for expected project impacts to sturgeon foraging and refuge habitat. This group included sturgeon scientists from Georgia and South Carolina, among them a scientist from The Nature Conservancy.

Question 3. In addition to the fish passage, are there some properties in this region that could be secured for habitat protection?

Answer. The technical workgroup did not identify any habitats that could be reasonably expected to improve the spawning success of shortnose sturgeon, and NOAA is not aware of any potential properties. However, we have asked the Georgia Department of Natural Resources for assistance in identifying properties that could potentially serve this function.

Question 4. My understanding is that while NOAA prefers that mitigation be accomplished within the Basin that is impacted, since the sturgeon are not thriving in the Savannah (monitoring has proven very few exist within the estuary), why not improve habitat in an area that has better success for the species for example in the Altamaha or the Ogeechee? Are there improvements to habitat in those basins that might be accomplished instead of or in addition to the fish passage?

Answer. Mitigating project impacts on the Savannah River shortnose sturgeon population is critical. Habitat improvements to conserve the shortnose sturgeon populations of other rivers, such as the Altamaha or Ogeechee, would benefit those populations but would not be appropriate mitigation for this project, which impacts the Savannah River shortnose sturgeon population. The best available information indicates the size of the Savannah River shortnose sturgeon population is second only to that of the Altamaha River and larger than all other assessed populations in the Southeast. Thus, the survival of the Savannah River population is essential to the species' overall conservation.

PREPARED STATEMENT OF LEE R. CROCKETT, DIRECTOR OF FEDERAL FISHERIES POLICY, PEW ENVIRONMENT GROUP

The Pew Environment Group (PEG) appreciates the opportunity to provide a statement for the record on the National Oceanic and Atmospheric Administration (NOAA) FY 2012 budget request, particularly as it relates to the implementation of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), the law that has governed management of America's ocean fish since signed into law on this very day in 1976.

The Pew Environment Group (PEG) offers qualified support for the President's FY 2012 budget request of $346.3 million for data collection and analysis programs at the National Marine Fisheries Service (NMFS). We are concerned that this request does not provide the long-term funding needed to maintain sustainable fisheries. Therefore, we consider it the minimum necessary to keep our fisheries on the road to recovery.

In the 35 years since the MSA was enacted on April 13, 1976, the law has enjoyed strong bipartisan support, including the most recent 2006 reauthorization, which was sponsored by the late Senator Ted Stevens and signed into law by President George W. Bush. The MSA provides the tools to sustainably manage ocean fish, one of America's most valuable natural resources. Healthy fish populations are the backbone of America's commercial and recreational saltwater fishing industries, which according to NMFS generated $163 billion in sales impacts and supported nearly 1.9 million full and part-time jobs in 2008 alone.[1] Ocean fish conservation is good for fishermen, America's economy and the environment. For this reason, diverse stakeholders including commercial fishermen, recreational anglers and environmental groups are united in advocating for data collection and analysis appropriations.

Relatively modest Federal investments in fisheries data collection and analysis in FY 2012 will help deliver over time billions of dollars in economic benefits and hundreds of thousands of jobs for U.S. taxpayers. PEG urges you to continue the bipartisan tradition of support for the MSA and provide adequate resources for data collection and analysis for the benefit of our fishing industries and ocean fish populations.

The MSA—Ending Overfishing in the United States

Fish have been a staple in our diet and an important part of our Nation's economic health since the time of the early settlers. George Washington managed a shad fishery at Mount Vernon, and Atlantic cod were critical to the survival and development of the early colonies. Unfortunately, overfishing (taking fish faster than they can reproduce) has diminished the economic potential of our Nation's ocean fish populations, particularly in recent decades. Today, nearly a quarter of our commercially and recreationally important ocean fish populations—including some tuna, cod, flounder, snapper and grouper species—are severely depleted.[2]

Congress first attempted to address this problem in 1976 when it passed the Fishery Conservation and Management Act, the precursor to the MSA, to "Americanize" our fisheries by eliminating foreign fishing off the U.S. coast and promoting the domestic fishing industry. However, over the course of the next two decades, policies focusing on expanding fishing, as well as dramatic improvements in technologies to locate and catch fish, resulted in overfishing becoming a national problem. Historic overfishing led to the collapse of many important fish populations around the country, most notably in New England, where severe declines in catch of such staples as cod wrought tremendous damage to fishing communities.

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[1] National Marine Fisheries Service (NMFS), 2010, "Fisheries Economics of the United States, 2008," *<http://www.st.nmfs.noaa.gov/st5/publication/index.html>*.

[2] NMFS, "2010 Status of U.S. Fisheries: Fourth Quarter Update," December 30, 2010. *<www.nmfs.noaa.gov/sfa/statusoffisheries/SOSmain.htm>*.

A bipartisan group of lawmakers crafted the Sustainable Fisheries Act in 1996, which changed the focus of the MSA from promoting fishing to conserving fish, because they recognized the toll that overfishing was taking on fishermen and fishing communities across the country in the form of lost jobs, reduced catch and idle boats. Unfortunately, these changes did to not put an end to overfishing, and in 2006 Congress overwhelmingly supported amendments to the MSA to end overfishing once and for all. Specifically, Congress required the establishment of science-based annual catch limits (ACLs) that do not allow overfishing and rebuild depleted fish populations and accountability measures to ensure success. President George W. Bush signed these amendments into law on January 12, 2007.

Thanks to these bipartisan reforms, today we are witnessing rebounding fish populations and increased fishing opportunities for commercial fishermen and recreational anglers across the country. For example, overfishing is no longer occurring in the Mid-Atlantic region; and summer flounder, which supports a valuable commercial and recreational fishery, is nearly fully rebuilt because managers finally reduced fishing pressure to sustainable levels. Just over twenty years ago, summer flounder had declined to less than 15 percent of healthy levels as a result of overfishing.[3] Now, the population has rebounded to 89 percent of a healthy level, enabling managers to increase the 2011 quota by 7.35 million pounds to 29.48 million pounds, an 86.9 percent increase in just over 3 years from a low of 15.77 million pounds in 2008. In 2009, we commissioned an economic study that found rebuilding all Mid-Atlantic fish populations to healthy levels would generate $570 million in annual economic benefits.[4] Sound fisheries management is clearly a good economic investment.

In the Gulf of Mexico, conservation measures put in place by managers to finally end decades of overfishing on Gulf red snapper have allowed red snapper populations to increase, enabling managers to raise the allowable catch by 39 percent in 2010 to 6.945 million pounds.[5]In 10 years, the red snapper catch is expected to increase from current levels to more than 10 million pounds annually, providing enduring economic benefits for fishermen and coastal communities hit hard by hurricanes and the recent *Deepwater Horizon* oil spill.[6]

In Alaska's Eastern Bering Sea, Snow Crab was heavily fished throughout the 1980s and 1990s and was subsequently declared overfished in 1999. In 2000, the North Pacific Fishery Management Council implemented a rebuilding plan for snow crab which reduced harvest rates and led to a population that is now at 96 percent of healthy levels.[7] Due to these management measure and increase in population size, fishery managers were able to increase the total allowable catch for the 2010 fishing season to 54.3 million pounds, a boost of 13 percent over the previous year.[8]

In New England, the Fishery Management Council is reforming the important groundfish fishery by adopting for the first time science-based annual catch limits and creating the voluntary "sector" management system that enables fishermen to form cooperatives that allow them greater flexibility in when they fish and control over how they fish. Preliminary data from NMFS show that these reforms are working: in the first 9 months of the fishing year, revenues were up 5 percent over the same time period in 2009, and the number of fish landed was down 14 percent.[9] When the fishing year ends in April, we will join Congress in carefully evaluating the economic and environmental performance of this new management system. However, if early reports are any indication, we can expect an end to overfishing, which in time will lead to growing fish populations, healthier ocean ecosystems and greater profits in New England.

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[3] *Supra* note 1.

[4] J. M. Gates, "Investing in Our Future: The Economic Case for Rebuilding Mid-Atlantic Fish Populations," Pew Environment Group (2009), *<www.endoverfishing.org/resources/PEG__rebuilding.pdf>*.

[5] National Oceanic and Atmospheric Administration (NOAA) Southeast Regional Office, 2010. "Southeast Fishery Bulletin FB10–027." *<http://sero.nmfs.noaa.gov/bulletins/pdfs/2010/FB10-027%20Gulf%20Red%20snapper%20FR%20Reg%20Amend.pdf>*.

[6] Gulf of Mexico Fishery Management Council, 2007. "Final Amendment 27 to the Reef Fish Fishery Management Plan and Amendment 14 to the Shrimp Fishery Management Plan." *<http://sero.nmfs.noaa.gov/sf/RedSnapper/pdfs/FinalRFAmend27-ShrimpAmend14.pdf>*.

[7] North Pacific Fishery Management Council, 2010 Final Crab SAFE, September 20010. *http://www.fakr.noaa.gov/npfmc/membership/plan__teams/CPT/CRABSAFE2010__910.pdf*.

[8] Alaska Department of Fish and Game, Division of Commercial Fisheries News Release. October 1, 2010. *http://www.adfg.alaska.gov/static/fishing/PDFs/commercial/newsreleases/shellfish/westward/nr112010–5.pdf*.

[9] NOAA Northeast Regional Office, 2011. "Sector Vessel Landings & Revenue, 2009 & 2010." *<http://www.nero.noaa.gov/ro/fso/reports/Sector__monitoring/Table__4.pdf>* Accessed 3/2/2011.

Return on Investment

As described above, America's investment in the MSA is providing tangible returns to fishermen, coastal communities and the Nation. America's fish are almost certain to become more valuable over time. While there are many factors that impact the market value of our ocean fish, the U.S. Department of Agriculture predicts that the price of fish and seafood in the U.S. is expected to increase significantly over time, faster than any other food through 2019.[10] Protecting and expanding the U.S. wild fish supply is increasingly important because America has developed a seafood deficit, with over 80 percent of seafood consumed in the U.S. being imported in recent years.[11] The relatively modest Congressional investment of $346.3 million for data collection and analysis programs that we recommend for FY 2012 is critical to begin reversing that trade deficit. NMFS estimates that rebuilding all of our depleted fish populations will deliver U.S. taxpayers an additional $31 billion in annual sales every year and support for 500,000 new American jobs.[12]

Supporting the Transition to Long Term Sustainability

Though we are beginning to see early returns on our investments as the MSA is implemented around the country, we recognize that the transition to sustainability has resulted in challenges for some fishermen. Decades of overfishing have reduced many fish populations to very low levels, increasing the difficulty and cost of their recovery. Management measures such as significantly reducing catch in the near-term or closing areas to fishing for a limited period of time are sometimes necessary to end overfishing and restore these fish populations.

Unfortunately, some fishermen are calling on Congress to weaken the MSA's conservation requirements to address these short-term economic challenges. This would be a mistake, because it was the loopholes in the law prior to the 1996 and 2006 amendments that allowed fishery managers to put short-term economics ahead of long-term conservation, resulting in overfishing and depleted fish populations. Rather than repeating the failed policies of the past, Congress should look for ways to help fishermen transition to sustainability while allowing federal managers to fulfill the promise of the MSA's conservation provisions. For example, regional permit banks in New England are a possible solution for fishermen in the groundfish fishery who need a low cost way to obtain more quota. NMFS has already provided $6 million to date to help New England states establish public permit banks to enhance fishing opportunities for small-scale groundfish fishermen.[13]

Another challenge we face in the transition to sustainable fisheries management is setting science-based catch limits for fish populations that lack recent stock assessments, a situation that is most pressing in the South Atlantic, Gulf and Caribbean regions. Some assert that managers are making decisions based on inadequate science and advocate for weakening or eliminating the requirement to set ACLs for these so called "data poor" species. Decades of experience have proven that failing to establish ACLs creates demonstratively negative consequences for many important fisheries across the country. For example, managers did not set hard fishing quotas for South Atlantic black sea bass for over twenty years despite multiple assessments indicating the dire status of this fish. Now, twenty years later, managers must take difficult steps to restore South Atlantic black sea bass, including most recently closing the commercial and recreational season 5 months early. This example shows that eliminating the requirement to set ACLs for data poor species in the short-term can have severe long-term costs.

It is important to note that there are no fish species managed under the MSA for which there are no data. Information is available on basic biology, life history characteristics or commercial and recreational catch numbers that can be used to set catch limits even for fish without complete assessments. For these fish populations, there are tools available for managers to set annual catch limits, some as simple as locking in current catch levels until more complete scientific evidence indi-

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[10] United States Department of Agriculture (2010), "USDA Agricultural Projections to 2019," See Table 39, page 99. *<http://www.usda.gov/oce/commodity/archive_projections/USDA AgriculturalProjections2019.pdf>.*

[11] NMFS, 2011, "Fisheries Economics of the United States, 2009", *<http://www.st.nmfs.noaa.gov/st1/fus/fus09/index.html>.*

[12] Testimony of Eric Schwaab on Implementation of the Magnuson-Stevens Conservation and Management Act before the U.S. Senate Committee on Commerce, Science and Transportation Subcommittee on Oceans, Atmosphere, Fisheries and the Coast Guard, p. 3, March 8, 2011: *<http://www.legislative.noaa.gov/112testimony.html>.*

[13] NOAA Northeast Regional Office. September 13, 2010. "NOAA and Rhode Island Department of Environmental Management Announce $1 Million Initiative to Establish Rhode Island Groundfish Permit Bank." *<http://www.nero.noaa.gov/nero/hotnews/RIGroundFishpermit bank/RIPB_PR9_13_10.htm>.*

cates that the population can support more fishing. These short-term measures will avoid the long-term costs incurred from unwittingly allowing overfishing.

FY 2012 Appropriations—Investing in Data Collection, Analysis and Monitoring Programs

Substantial progress toward ending overfishing in the storied New England groundfish fishery and the rebound of recreationally and commercially important fish populations like summer flounder in the Mid-Atlantic illustrate that the MSA is working. In order to build on this success, we must give managers the tools to fully implement the MSA. Data collection programs in particular are the lifeblood of good fisheries management, generating information that helps managers make informed decisions, and fishermen and other fishery-related businesses plan their investments and business actions. Congress should support these programs because they are critical for maintaining healthy fish populations that support stable and productive fisheries.

As such, PEG supports the President's FY 2012 request of $346.3 million for the following core data collection, analysis and monitoring programs, an increase of $1.4 million over FY 2010 enacted funding levels. We note that proposed reductions made by the Administration (described below) from FY 2010 levels will negatively impact programs that are important for monitoring, building bridges with fishermen and collecting important biological and socioeconomic data. PEG recognizes the difficult fiscal climate in the U.S., and we would like to follow-up with the Committee to discuss the long-term investment levels needed to support productive fish populations and fisheries. With regard to FY 2012, we support the following specific line-item requests:

- *Expand Annual Stock Assessments:* $67.1 million as requested, an increase of $16.2 million over the FY 2010 enacted level. Fish stock assessments are critical for setting science-based ACLs that prevent overfishing and maintain productive fisheries over time. This funding would provide NMFS greater capability to assess the 230 commercially and recreationally important fish stocks managed by the Federal Government. Timely, updated stock assessments reduce the scientific uncertainty associated with ACL-setting and can help fishery managers to increase commercial and recreational fishing opportunities while minimizing the risk of overfishing. We strongly support this critical increase in funding.
- *Fisheries Statistics:* $24.4 million as requested, an increase of $3.4 million over the FY 2010 enacted level. This budget line item supports programs that provide advice, coordination and guidance on matters related to the collection, analysis and dissemination of statistics in both commercial and recreational saltwater fisheries. The Marine Recreational Information Program, created to improve the quality and accuracy of recreational fishing data per the 2006 MSA amendments, is funded primarily through this budget line-item. Higher quality data on marine recreational fishing, which contributes $59 billion in sales impacts to the U.S. economy and supports 384,000 jobs, will allow scientists to better estimate fishing mortality and set ACLs more accurately, thus reducing the risk of overfishing.[14] At a time when recreational fishermen and scientists agree that better data are critical for both restoring fish populations and increasing recreational fishing opportunities, we urge Congress to support this increase in funding.
- *Survey and Monitoring Projects:* $24.2 million as requested, an increase of $.5 million over the FY 2010 enacted level. NOAA has stated that "many fisheries lack adequate and timely monitoring of catch and fishing effort."[15] Survey and monitoring projects provide critical support for implementation of the new ACL requirement. Increased funding will improve the accuracy of ACLs and increase the percentage of stocks with assessments[16] Additional funding for fishery-independent surveys, monitoring and research will improve estimates of ecosystem change, fishing mortality and population size.

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[14] NMFS, 2010, "Fisheries Economics of the United States, 2008," *<http://www.st.nmfs.noaa.gov/st5/publication/fisheries_economics_2008.html>*.

[15] NOAA, "Budget Estimates, Fiscal Year 2009, Congressional Submission," p. 166. Available at: *http://www.corporateservices.noaa.gov/nbo/fy09_rollout_materials/NOAA_FY09_Final_CJ.pdf*.

[16] NOAA, "Technical Memorandum NMFS-F/SPO–56: Marine Fisheries Stock Assessment Improvement Plan: Report of the National Marine Fisheries Service National Task Force for Improving Fish Stock Assessments," October 2001. Available at: *http://www.nmfs.noaa.gov/pr/sars/improvement/pdfs/marine_fisheries_saip.pdf*.

- *Observers/Training:* $39.1 million as requested, a decrease of $1.9 million from the FY 2010 enacted level. Trained fisheries observers provide essential data on the amount and type of fish caught by fishermen, which is used for compliance monitoring and scientific stock assessments.[17] NOAA considers at-sea observers the most reliable source of information about fishing catch and bycatch (*i.e.,* incidental catch of non-target ocean wildlife).[18] We feel that this request does not reflect the annual investment needed for observer programs.
- *Cooperative Research:* $7.2 million as requested by the President, a decrease of $10.3 million from the FY 2010 enacted level. Cooperative research programs pay fishermen, working under the direction of Federal scientists, to collect fisheries data and test new sustainable fishing gear and practices. These programs provide jobs for fishermen and also enable managers to tap into their on-the-water knowledge and expertise. In 2003, NMFS estimated that it would need $25.5 million for cooperative research by FY 2009.[19] We are concerned about the effect of the proposed reduction on fishermen and would suggest that cooperative research should be funded at this level.

  In addition, the President's FY 2012 budget request transfers $6 million out of the cooperative research line item and into the National Catch Share Program line item. We believe that any increases for catch share programs should be made with new money, not transferred from existing general research programs that should be available for all fisheries. Although NMFS asserts that the $6 million will be used for cooperative research in catch share fisheries, there is no guarantee that it will continue to be used for cooperative research in the future. Taking funding from general cooperative research, where it would be available for all fisheries, and restricting it to only catch share fisheries, short changes the vast majority of fisheries, which are not catch share fisheries.
- *Fisheries Research and Management Programs:* total of $184.3 million as requested, a $6.5 million decrease from the FY 2010 enacted level. Fisheries research and management programs provide accurate and timely information and analysis of the biology and population status of managed fish, as well as the socioeconomics of the fisheries that depend on those populations. Such information is critical for the development of management measures to ensure that they end overfishing, and we have concerns regarding the reduction from FY 2010 levels. Because of their vital role, Fisheries Research and Management Programs should be funded at no less than the FY 2012 request of $184.3 million. In NOAA's FY 2012 budget request, $11.4 million is transferred from the Fisheries Research and Management Programs line item into the National Catch Share Program line item. As with Cooperative Research, no funds from this line item should be transferred to the National Catch Share Program because those funds would become permanently unavailable to support research and management of the vast majority of federally managed fisheries that are not currently in a catch share program, and may not be included in one in the future.

Conclusion

Good fisheries management leads to healthy fish populations, a stable and productive fishing industry and robust recreational fisheries—a win-win for conservation, anglers and marine-related businesses. Today, because of the MSA, fishery managers are using science-based catch limits that do not allow overfishing and rebuild depleted fish populations to healthy levels. These requirements are working, providing economic benefits to fishing communities and the Nation as a whole, and promise to provide even greater returns in the future. We cannot afford to leave the job of bringing all fish populations to healthy levels unfinished—our nation's fishermen and our fish resources depend on it. The relatively modest investments that we are requesting today will lead to tremendous yield in the future. According to

[17] NOAA, "NOAA FY 2012 President's Budget", Chapter 2: National Marine Fisheries Service, p. 315–19. Available at: http://www.corporateservices.noaa.gov/~*nbo/fy12_presidents_budget/National_Marine_Fisheries_Service_FY12.pdf*.

[18] NOAA/NMFS, Evaluating Bycatch: A National Approach to Standardized Bycatch Monitoring Programs, NOAA Technical Memorandum NMFS-F/SPO–66, October 2004. 108 p.

[19] NMFS' 2003 5 year assessment estimated the need for cooperative research to be $22.8 million above FY 2003 levels by FY 2009, for a total of $25.5 million.

NMFS, rebuilding all U.S. fish populations will lead to a $31 billion increase in annual sales and support for half a million new U.S. jobs.[20]

We ask the Committee to continue its support of the MSA and invest at least $346.3 million in FY 2012 in one of America's most valuable natural resources, our ocean fish populations, so that they can continue to provide significant and growing benefits for U.S. taxpayers through fishing jobs, healthy oceans, local seafood and vibrant coastal communities.

April 12, 2011

Hon. BARBARA MIKULSKI,
Chairwoman,
Subcommittee on Commerce, Justice, Science, and Related Agencies,
Committee on Appropriations,
U.S. Senate,
Washington, DC.

Hon. KAY BAILEY HUTCHISON,
Ranking Member,
Subcommittee on Commerce, Justice, Science, and Related Agencies,
Committee on Appropriations,
U.S. Senate,
Washington, DC.

Dear Chairwoman Mikulski and Ranking Member Hutchison,

We, the undersigned 130 organizations representing a diverse range of commercial and recreational fishing associations, commercial seafood dealers, the charter and for-hire industry, fishery dependent businesses and ocean conservation organizations, collectively urge the Subcommittee and all Members of Congress to support the President's FY 2012 NOAA budget request of $91.5 million for the Expand Annual Stocks Assessments and Fisheries Statistics line-items. We request that you make these data collection and analysis line items a top priority in FY 2012.

The National Marine Fisheries Service estimates that U.S. commercial and saltwater recreational fishing contributes over $160 billion to the economy annually and supports nearly 2 million jobs. These industries rely on healthy fish populations, which provide food for our tables, offer recreational opportunities for millions of Americans and sustain jobs and communities on every coast. Congress should invest in America's fish populations and fishing businesses by providing the funding necessary to ensure that managers use the best science possible to guide stewardship of our ocean fish resources.

Expand Annual Stock Assessments ($67.1 million, as requested)

Stock assessments provide the basic information that scientists use to determine the health of fish populations. Assessments provide estimates of abundance and catch levels that a fish population can support. Increased funding will reduce scientific and management uncertainty and will allow managers to set catch levels and accountability measures that maximize fishing opportunities while rebuilding those that have been determined to be overfished and maintaining healthy fish populations.

Fisheries Statistics ($24.4 million, as requested)

The 2006 amendments to the Magnuson Stevens Act required the Agency, within 2 years, to improve the quality and accuracy of their primary private angler data collection program. These amendments led to the establishment of the Marine Recreational Information Program which is funded primarily through the Fisheries Statistics budget line. Investment of funds for this line item will improve data on recreational catch levels and participation, and will help scientists to better estimate recreational fishing mortality and set more accurate catch limits. This program will also result in more timely decisions that both the regional fishery management councils and the fishing industry need to improve management and potentially lead to more fishing opportunities.

Thank you for your consideration of our requests. Rarely does such a diverse group of U.S. stakeholders agree on fishery-related issues, but on the need to adequately fund fisheries data collection there is no disagreement. If we are going to have abundant fisheries, Congress must provide the resources to necessary to sustainably manage ocean fish by ensuring that management decisions are based on timely and accurate information and analysis. The health of America's ocean fish

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[20] Testimony of Eric Schwaab on Implementation of the Magnuson-Stevens Conservation and Management Act before the U.S. Senate Committee on Commerce, Science and Transportation Subcommittee on Oceans, Atmosphere, Fisheries and the Coast Guard, p. 3, March 8, 2011: *<http://www.legislative.noaa.gov/112testimony.html>*.

populations and the jobs, income, recreation, seafood and communities that they sustain depend on your investments in FY 2012.

Sincerely,

National:

Jim Martin, Conservation Director, Berkley Conservation Institute, Pure Fishing
Aaron Adams, Ph.D., Director of Operations, Bonefish and Tarpon Trust
Norris McDonald, President, Center for Environment, Commerce & Energy, African American Environmentalist Association
Michael Gravitz, Oceans Advocate, Environment America
Carl Safina, President, Blue Ocean Institute
Amanda Leland, Associate Vice President, Oceans Environmental Defense Fund
Tobias Aguirre, Executive Director, FishWise
Phil Kline, Senior, Ocean Campaigner, Greenpeace USA
Lewis Regenstein, Interfaith Council for the Protection of Animals and Nature
Rob Kramer, President, International Game Fish Association
Bruce J. Stedman, Executive Director, Marine Fish Conservation Network
Sean Saville, National Field Director, National Audubon Society
Jason M. Patlis, President and CEO, National Marine Sanctuary Foundation
Sarah Chasis, Director, Oceans Program, Natural Resources Defense Council
Chris Dorsett, Director, Fish Conservation and Gulf Restoration Program Ocean Conservancy
Michael Stocker, Director, Ocean Conservation Research
Diane Buccheri, Publisher, OCEAN Magazine
Beth Lowell, Federal Policy Director, Oceana
Lee Crockett, Director, Federal Fisheries Reform, Pew Environment Group
Fabien Cousteau, Founder and President, Plant a Fish
Paul G. Johnson, State Programs & Policy Director, Reef Relief
David Jenkins, Vice President for Government and Political Affairs, Republicans for Environmental Protection
Dan Pingaro, Executive Director, Sailors for the Sea
Jamie Pollack, Co-Founder and Director, Shark Savers
Doug Olander, Editor in Chief, Sport Fishing Magazine
Marc A. Yaggi, Interim Executive Director, Waterkeeper Alliance
Randy Repass, Founder and Chairman, West Marine

Alabama:

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Dr. Jan Freiwald, Director, Reef Check California, Pacific Palisades, CA
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Delaware:

Michael Riska, Executive Director, Delaware Nature Society, Hockessin, DE

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David W. Hartman, President and Dive Instructor, Fantastic Endeavors, Key Largo, FL
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Landis Hudson, Executive Director, Maine Rivers, Yarmouth, ME
Glen Libby, Chairman, Midcoast Fishermen's Association, Port Clyde, ME
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Jim Chambers, Founder and Owner, Prime Seafood, Kensington, MD

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Art Benner, President, Alewives Anonymous, Rochester, MA
David Klotsbach, President, Bach Corp, Plymouth, MA
William Wynne, CEO, Byson Investments, Duxbury, MA
Robert Avilla, General Manager, Capt. John Boats, Plymouth, MA
Jason Cincotti, Principal, Cence Cincotti Strategies, Boston, MA
Peter Shelley, Senior Counsel, Conservation Law Foundation, Boston, MA
Robert Almond, COO, Full Armor, Boston, MA
Alan Costello, Owner, FV Alyson Marie, Plymouth, MA
Thomas O'Reilly, Owner, FV Karen M., Plymouth, MA
Kerry Mackin, Executive Director, Ipswich River Watershed Association, Ipswitch, MA
Jane Lane, Vice President, Johnston Associates, Boston, MA
Joseph DiLorenzo, Partner, MD Group, Scituate, MA
Carol Carson, President, New England Coastal Wildlife Alliance, Middleboro, MA
Paul O'Sullivan, President, O'Sullivan & Associates, Quincy, MA
Denis Hanks, Executive Director, Plymouth Area Chamber of Commerce, Plymouth, MA

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Fred Akers, River Administrator, Great Egg Harbor Watershed Association, Newtonville, NJ
Mary M. Hamilton, Executive Director, SandyHook SeaLife Foundation, Medford, NJ

New York:

Bernie Chowdhury, President, Alpha Dive Training, Middletown, NY
Adrienne Esposito, Executive Director, Citizens Campaign for the Environment, Farmingdale, NY
Ralph Towlen, Captain, Coastal Water Guides, Hampton Bays, NY
Margaret Lydecker, Founder, Green Drinks NYC, New York, NY
Jack Pollack, President, Integrated Electronic Systems, New York, NY
David Blinken, Captain and Fishing Guide, North Flats Guiding, East Hampton, NY
Michael Feld, Founder and President, Ocean Blue Divers, New York, NY
Phillip Musegaas, Esq., Hudson River Program Director, Riverkeeper, Ossining, NY
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Alissa Bierma, Upper Neuse Riverkeeper, Neuse Riverkeeper Foundation, New Bern, NC
Dan Crawford, Director of Governmental Relations, North Carolina League of Conservation Voters, Raleigh, NC
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Tess Sanders, Executive Director and Riverkeeper, White Oak-New Riverkeeper Alliance, Jacksonville, NC

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Adam Garber, Field Director, PennEnvironment, Philadelphia, PA

Rhode Island:

Roland St.John, Owner, Big Blue Aquatic Gifts, Tiverton, RI
Charlie Donilon, Owner and Captain, Snapper Charters, Wakefield, RI

South Carolina:

Dana Beach, Executive Director, South Carolina Coastal Conservation League, Charleston, SC

Texas:

Michael Miglini, Board Member, Charter Fishermen's Association, Corpus Christi, TX
Scott Hickman, Owner and Operator, Circle H Outfitters, Galveston, TX
Luke Metzger, Director, Environment Texas, Austin, TX
Captain Shannon LaBauve, Owner and Operator, Geaux Fishing Charters, Houston, TX
Captain Darrell Hingle, Owner and Operator, Hingle's Guide Service, Galveston, TX

Captain Mike Segall, Owner and Operator, Reel Threel Saltwater Charters, Galveston, TX
Evonn Caraway, Operations Manager, Underwater Expeditions, Freeport, TX

Virginia:

Bev Sell, 5 Point Norfolk Farm Market, Norfolk, VA
Bethina Essert, Owner, Alchemy Redefined, Norfolk, VA
Jesse Scaccia, Owner, Alt Daily, Norfolk, VA
William Cox, Owner, And Design Collective, Virginia Beach, VA
Romayne Byrum, Owner, Batten Bay Farm, Virginia Beach, VA
Lyn Cherry, Owner, Beach Flavor, Virginia Beach, VA
Jessica Whitaker, Owner, Bull Dog Beads, Virginia Beach, VA
Dan Boyle, Manager, Central VA Wind Energy and Manufacturing, Charlottesville, VA
Michael Cherry, Owner, Cherry Brothers Railing Company, Virginia Beach, VA
Pat Okerland, Chair, Chesapeake for Change, Chesapeake, VA
Kara Morisette, Manager, Counseling Interventions, Virginia Beach, VA
Laura Wood-Harbor, Owner, Croc's Eco-Bistro, Richmond, VA
Frederick Perry, Owner, Dominion Fuels, Hampton, VA
Scott Barta, Owner, Echelon Pavers, Virginia Beach, VA
Christina Trapani, Owner, Eco Maniac, Norfolk, VA
Amelia Baker, Owner, Green Alternatives, Norfolk, VA
Randy Gilliland, Director, Green Jobs Alliance, Hampton, VA
Laura Wood Harbor, Restaurants and Hospitality Green Advisor, Greener Results Virginia, Norfolk, VA
Zac Jungers, Director, Hampton Roads Green Caffeine, Hampton, VA
Zac Jungers, Director, Hampton Roads Green Drinks and Green Caffeine, Hampton, VA
Tyler Joran, Owner, ModTra Corp, Virginia Beach, VA
Joe Cook, Virginia Organizer, MoveOn.Org-Hampton Roads, Norfolk, VA
Tench Phillips, Owner, Naro Expanded Cinemas, Norfolk, VA
Courtney Simmons, President, Nuckols Tree Care, Virginia Beach, VA
Jessica Riehl, Owner, Riehl Photography and Green Irene, Chesapeake, VA
Duane Thompson, Owner, Sabrosa Foods, Norfolk, VA
Jeff Kelble, Riverkeeper, Shenandoah Riverkeeper, Boyce, VA
Richard Good, Owner, Solar Services-Virginia Beach, Virginia Beach, VA
Stephen Hoots, Owner, Stephen Hoots Contracting, Virginia Beach, VA
Richard Hahn, Owner, Sunrise Solar and Wind, Norfolk, VA
Terra Pascarosa, Owner, Terra-Scapes Environmental Consulting, Virginia Beach, VA
Tom Robatham, Owner, Treehouse Magazine, Norfolk, VA

Washington:

Cleve Steward, Executive Director, Sustainable Fisheries Foundation, Snohomish, WA

cc: The Honorable Daniel K. Inouye, Chairman, U.S. Senate Committee on Appropriations The Honorable Thad Cochran, Vice Chairman, U.S. Senate Committee on Appropriations Members of the U.S. Senate Subcommittee on Commerce, Justice, Science and Related Agencies The Honorable John D. Rockefeller, IV, Chairman, U.S. Senate Committee on Commerce, Science and Transportation
The Honorable Mark Begich, Chairman, U.S. Senate Subcommittee on Oceans, Atmosphere, Fisheries and Coast Guard
The Honorable Olympia J. Snowe, Ranking Member, U.S. Senate Subcommittee on Oceans, Atmosphere, Fisheries and Coast Guard
The Honorable Doc Hastings, Chairman, U.S. House of Representatives Committee on Natural Resources
The Honorable Edward J. Markey, Ranking Member, U.S. House of Representatives Committee on Natural Resources
The Honorable John Fleming, Chairman, U.S. House Subcommittee on Fisheries, Wildlife, Oceans and Insular Affairs
The Honorable Gregorio Sablan, Ranking Member, U.S. House Subcommittee on Fisheries, Wildlife, Oceans and Insular Affairs

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